THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VI. CHICAGO, JUNE 12, 1886. No. 24.

ADDRESS IN STATE MEDICINE.

BY JOHN H. RAUCH, M.D.,

OF ILLINOIS.

CHAIRMAN OF THE SECTION OF STATE MEDICINE.

Delivered at the Thirty-Seventh Annual Session of the American Medical Association, in St. Louis, on May 6, 1886.

Article II, Section 4 of the By-Laws of the Association prescribes that the "chairmen of the several Sections shall prepare and read, in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their several sections."

In attempting to discharge this duty it will be well, first, to define State Medicine and the branches of science which it includes. I have been unable to find a definition sufficiently comprehensive to cover what is conceived to be properly embraced within the scope of State Medicine. Dunglison defines it to be "the medical knowledge brought to bear on State objects, as on public hygiene and matters pertaining to medical jurisprudence." In the introduction to his Manual of Practical Hygiene, Parkes, in pointing out the limitations of his subject, says: "In some cases the rules of hygiene could not be followed, however much the individual might desire to do so. For example, pure air is a necessity for health; but an individual may have little control over the air which surrounds him, and which he must draw into his lungs. He may be powerless to prevent other persons from contaminating his air and thereby striking at the very foundation of his health and happiness. Here, as in so many other cases which demand regulation of the conduct of individuals towards each other, the State steps in for the protection of its citizens, and enacts rules which shall be binding upon all. Hence arises what is now termed 'State Medicine'—a matter of the greatest importance."

But in illustrating this "matter of the greatest importance," Dr. Parkes clearly confines State Medicine to the relation of the State to purely sanitary matters—the protection of the individual against being placed under unfavorable hygienic conditions by the action of others, as of workmen by an ignorant or careless employer, of tenants by landlords, of food consumers by adulteration, etc., etc.

De Chaumont greatly widened this definition in the preliminary lecture of his course on State Medicine, delivered in 1875. "State Medicine," he says, "has been written about, talked about, and quarrelled about, but it has rarely been explicitly defined, and to many it conveys no very distinct idea. It has been confounded with public health, and generally much misunderstood, the part being frequently taken for the whole, and the wider scope of its action but little apprehended. It includes the questions of public health and hygiene, general, special and individual, but its own appropriate province is such general control as will determine the several specialties in the directions most fitted for the well-being of the community. In fact, we may succinctly define State medicine to be, in quasi-legal phraseology, 'the office of the sanitarian promoted by the State,'" and he predicts both its perfection and its extinction when the sanitarian as differentiated from the community generally, and the State as a controlling and interfering influence, shall have ceased to be—the one because every member of a perfected community will be a sanitarian, and the other because in such an ideal community State interference will have become unnecessary.

There is still the limitation of the term "medicine" to the sanitarian in this definition, a distinction between preventive medicine—the field of the sanitarian, and curative medicine—the field of the physician. But I think it is coming to be recognized that such a distinction is artificial and unnecessary, and I agree with Richardson, who, in speaking of the preventive scheme of medicine, says of the so-called science and art of preventive medicine: "It is not a science, it is not an art, separated necessarily or properly from curative medicine. On the contrary, the study of prevention and cure proceed well together, and he is the most perfect sanitarian, and he is the most accomplished and useful physician, who knows most both of the prevention of disease and of the nature and treatment of disease; he who knows, in fact, the before and the after of each striking phenomenon of disease that is presented for his observation."

In this evolution of a definition one or two more quotations may be admissible. Addressing the Association at the Atlanta meeting in 1879, on "The Regulation of Medical Practice by State Boards of Health as Exemplified by the Execution of the Law in Illinois," Dr. H. A. Johnson suggested, in his conclusion, "that it is the duty of the State to protect its citizens from the injuries they may sustain from the practice of incompetent physicians and surgeons, as well as from any other source of danger to public

health." And in the summary prefacing the Sixth Annual (1883) Report of the Illinois State Board of Health, it is observed that "Boards of health are created and maintained for the conservation of the interests of health and life. Ordinarily their functions are limited to dealing with sanitary questions; with the removal of the causes of preventable disease and premature death. This Board, however, is also charged with the execution of the act to regulate the practice of medicine in the State; and thus the medical profession, one of the most important agencies which is concerned with the interests of health and life, is brought within the scope of sanitary legislation. To improve the status of the individual practitioner, and to develop a well-trained and thoroughly educated medical profession, must result in increasing the value of this force in sanitary science and public hygiene; a force which, in the nature of things, must always exist so long as there are physicians and patients; and the character and influence of which must always hold a direct relation to the tone, the attainments, and the competency of those by whom it is exerted."

The application of the term State Medicine is thus seen to have been successively extended from the agency of the State in matters of hygiene beyond the control of the individual, first to measures of preventive medicine in general, and thence to curative medicine in so far as it is the duty of the State to regulate medical practice. State Medicine may therefore be now defined as the connection of the State with "*that branch of science which relates to the* PREVENTION, CURE *or* ALLEVIATION *of the diseases of the human body.*"[1] It embraces not only all public sanitary measures, but also the practice of medicine in so far as this is regulated by the State. Therefore, any report upon "the advances and discoveries of the past year" in the branches included in this Section may logically begin with the subject of the regulation of medical practice, which also and necessarily includes the subject of medical education.

STATE REGULATION OF MEDICAL PRACTICE AND MEDICAL EDUCATION.

Before proceeding to discuss the present status and recent progress in these matters, it may be well to set forth, briefly, the authority by which the State assumes to regulate the practice of medicine. That authority is the inherent and plenary power which resides in the State to prohibit all things hurtful, and to promote all things helpful, to the comfort, welfare and safety of society. Speaking specifically of the Illinois Medical Practice Act, ex-Governor John M. Hamilton has recently said: "The object of the Medical Practice Act was primarily a police regulation. Incidentally it was educational. Primarily the purpose of the law was to rid the State of incompetent, ignorant and dangerous mountebanks and quacks, who were carrying on a fraudulent and nefarious business by all manner of deceit in a pretended practice of medicine among the people. It was to protect the lives, the health, the morals and the property of the people of the State from the shameless depredations of swindlers and adventurers who, by all manner of false representations and deceptive promises, were taking advantage of the misfortunes of the people in sickness and ailments of all kinds, to still further injure their health, endanger their lives and rob them of their money.

"Incidentally the law was designed to require a reasonable amount of education to fit one for the practice of medicine before he should be allowed to enter that profession, so directly and intimately connected with the lives, the health and the happiness of the people. Both these purposes come clearly within the police powers of the State in affording such protection to its citizens."

An unbroken line of authorities, from Blackstone down to the most recent decisions of the various Supreme Courts, hold that the police powers of the State are plenary and inalienable, co-extensive with the natural right of self-protection; that their exercise is demanded and justified by the "law of over-ruling necessity;" and that broadly, they are the foundation of all laws and regulations for the well-being or government of the people, and especially, of all laws, ordinances, rules and regulations for the preservation of the health or safety of the community. Early in the history of the country laws, thus founded, were enacted for the regulation of the practice of medicine. But the sparse population and the conditions which then obtained, as well as the fact that many of the enactments were so onerous and restrictive that they came to be regarded by the public as in the nature of class legislation, operating to make the profession a close guild or trades union, rendered their enforcement impracticable. They were gradually repealed or fell into a state of "innocuous desuetude," until about 1830–1840 there were practically no restrictions, the profession became a "free-for-all;" bogus diplomas were openly and unblushingly sold and displayed by their purchasers, as credentials of membership in a learned profession. The country was overrun by hosts of ignorant, immoral and dangerous swindlers, self-styled "doctors," who preyed upon the unfortunate afflicted; "isms" and so-called "schools" of medical practice multiplied, a mushroom crop of diploma-mills sprang up over the land; and as a natural result, the general standard of medical education and of requirements for graduation—except among the best class of medical colleges—fell lower and lower.

A reaction from this condition began at about the close of the first century of our National existence, at which time, 1876, North Carolina had a well-framed law, creating a State Board of Medical Examiners, passed in 1859. Kentucky had enacted a law in 1874, creating district examining Boards, but except in a few counties, this soon became a dead letter. In In 1875 Nevada, and in 1876 California and Texas legislated upon the subject. In 1877 Alabama established a State Board of Medical Examiners, and Illinois passed a Medical Practice Act, the execution of which was devolved upon a State Board of Health created by a separate enactment. Within the next two years only two other States took action—Kansas in 1879 (repealed in 1881) and New York in 1880. In 1881 nine States and one Territory enacted med-

[1] The quotation is the definition of *medicine* according to Webster.

ical practice laws, viz.: Arizona, Arkansas, Colorado, Connecticut, Florida, Georgia, Nebraska, New Jersey, Pennsylvania and Wisconsin. In 1882, Louisiana, Mississippi, New Hampshire, New Mexico, South Carolina, West Virginia and Wyoming; in 1883, Delaware, Michigan, Minnesota and Missouri; in 1884, Dakota and Virginia, and, since the last meeting of the Association, Indiana and Iowa have swelled the total to thirty-three States and Territories of the Union, which now exercise some degree of legislative control over the practice of medicine within their borders.

The general drift and tendency of this legislation are toward securing a recognized standard of professional attainments, evidence of which—with a few notable exceptions—is afforded by the presentation of a diploma of graduation from some legally-chartered institution in good standing; or, in the absence of this, an examination more or less strict, in the various fundamental branches of medical science. The exceptions are in the States of Alabama, Mississippi, North Carolina and Virginia, where the diploma is ignored, and the applicant for admission to practice must establish his possession of the necessary skill and ability so far as an examination may determine the same.

As an evidence of fitness and qualification the diploma must obviously vary in character with the character of the institution by which it is issued. Medical instruction in this country is almost entirely a matter of private enterprise, and until within a few years, numerous "colleges" with the briefest of lecture-terms, conducted by the scantiest of faculties—in which one man often played many parts—innocent of clinical, surgical or anatomical material, and with the most charitable of examinations have graduated into the profession all who could pay the necessary fees and armed them with the talismanic diploma.

Since 1765 a total of 224 medical educational institutions have been founded—not established—in this country, of which number 105 are now fortunately extinct. There are still remaining 120 medical schools of all kinds in the United States, and among them, it is only fair to say are some in which the course of instruction, the facilities and the competency of the teachers are as high as anywhere in the world. Within the last twenty years there has been, in fact, a marked and gratifying improvement in the standard of medical education. I quote a few illustrations of recent improvement from my last report on "Medical Education in the United States and Canada:" There are now 93 out of the existing 120 colleges in the United States, which exact an educational requirement as a condition of matriculation; in the first report there were only 45. Attendance on three or more lecture-courses before graduation is now required by 24 colleges, as against 12 heretofore; and provision is made for a three or four years graded course by 58 others. Hygiene is now taught in 91 colleges, and medical jurisprudence in 97; as against 42 and 61, respectively, heretofore. The average duration of lecture-terms has increased from 23.5 weeks to a fraction over twenty-five weeks; 7 more colleges have lecture-terms of five months or over, and 10 more have terms of six months or over as compared with the sessions of 1882–1883.

While much of this progress is due to a general and increasing desire on the part of the profession to raise the standard of attainments necessary to enter its ranks, and to the enforcement of certain requirements in States which have enacted laws regulating the practice of medicine, it will not be invidious to attribute a fair share to the adoption in 1880, by the Illinois Board of a schedule of minimum requirements, enforced since 1883, and which prescribes that a medical college, in order to be held in good standing for the admission of its graduates to practice in Illinois, shall exact such a general preliminary education of the intending student before his admission to the lecture-room, as will enable them to comprehend the instruction therein given; and shall issue its diploma conferring the degree of M.D., only upon the completion of such curriculum of study—as to the branches of medical science taught, the duration of the reading, and of lecture-terms, and the amount of practical instruction in hospital and at the bedside—as obtains in the average medical school.

Minnesota, Missouri and West Virginia exact substantially the same standard, and the work of the Minnesota Board especially has been wide-reaching and beneficial in this respect. The Iowa law, just enacted, confers similar powers, and the influence upon medical education of this group of States—Minnesota, Missouri, Iowa and Illinois—in establishing a uniform test of the "good standing" of a medical college, must be felt throughout the country. Fully one-third of the new graduates every year settle in the West, and colleges must, perforce, take cognizance of this fact.

While the schedule of minimum requirements does not set up so high a standard as that aimed at by the American Medical College Association, it has the advantage of applying to all schools of medicine and of having been successfully enforced for three years. Furthermore, it is susceptible of modification, and the question is already being considered whether the time is ripe for a further advance. Until within a short time there had been, for sixty years, no marked departure from the orthodox three years of study and two courses of lectures as the requirements for graduation. But, as already shown, there are now twenty-four colleges which practically require four years of study and attendance upon three terms of lectures; and fifty-eight others which make provision for a similar extended course. The domain of medicine has so far widened its borders, especially within the present generation, that the methods and periods of study which sufficed thirty or forty years ago are no longer adequate.

A low standard of medical education, and the absence of uniform legal requirements are also responsible, almost exclusively, for the overcrowding of the profession. Did time suffice it would be interesting to present this matter in detail, but I can now only glance at some of the results of my study of this phase. In 1880 there were, according to the National census, 83,436 physicians in the United States. Since that date there have been added—exclusive

of the foreign increment—23,531 new graduates, not including those of the last session, 1885–1886. This makes a total of 106,947, and is an annual increase of over five and one-half per cent., while the annual increase of population is less than two per cent. The annual death-rate—basing that of the country at large upon the Illinois rate, which I have pretty accurately determined to be 12.38 per thousand—is less than that of adult males engaged in all occupations; and the difference will probably fairly balance the loss by those who retire from practice on account of old age, physical disability, and other causes not connected with the question of fitness and professional success.

It will, then, be within bounds to say that the excess of the per centage of new graduates over the per centage of increase of population represents the number of unnecessary recruits to the ranks of the profession every year.

The answer to the question, What becomes of them? is indicated by these figures concerning the profession in Illinois:

June 14, 1880.	
Total number in practice as shown by Official Register of that date	5,979
Total number of new certificates issued to new men up to February 10, 1886	2,063
Total number to be accounted for	8,042
February 10, 1886.	
Total number in practice as shown by Official Register of that date	6,065
Total number died	344
" " left the State	1,061
" " abandoned practice	572
	8,042

That is to say, over seven per cent. of the entire number failed as physicians and sought other modes of obtaining a livelihood. It is noteworthy, by the way, that non-graduates fall out in much larger proportion than the graduates, and that the graduates of three-course schools show the smallest per centage of loss, either by removal from the State or by abandonment of practice.

Here are some instructive figures for Chicago: In 1880 there were certificates issued to 172 new comers; five years later only 84 of these remained—a loss of over one-half. In 1881 there were 183, in 1882, 171, 1883, 209, and in 1884, 198 new comers; and in 1885 there remained of each year's group, 97, 116, 145, and 168, respectively. In one year the loss was 15 per cent.; in two years, 30 per cent.; in three years, 32 per cent.; in four years, 47 per cent.; and in five years over 51 per cent.

There are from 1500 to 2000 physicians in the State of Illinois more than are necessary to supply the legitimate demands for professional services, and who are not earning a comfortable livelihood from legitimate professional exertion. And what is true of Illinois is probably substantially true of every State in the Union. I will not stop to dwell upon the demoralizing effect of this condition—demoralizing to the individual, to the profession, and to the public. Instances of this demoralization must be familiar to every member of the Association.

On the other hand, and by way of contrast, I wish to add one further illustration from my personal experience. During the past nine years my official position has made me familiar with the professional history and status of over 13,000 men, more or less directly connected with the practice of medicine in Illinois. I have followed up, with especial interest and care, the careers of 789 out of 1000 physicians who studied four years and attended three terms before graduating. These are, with few exceptions, the successful and prominent members of the profession in the different communities in which they reside. They are well-equipped by general education, by an ample period of professional study, by didactic and clinical instruction, and by hospital practice. They are successful, as a rule, because they have fitted themselves to command success, and this Association can do few things more directly in the interest of the public and of the profession than to exert its further influence to increase their number while decreasing the number of the opposite class.

The foregoing considerations seem to me to lead logically to the following conclusions:

1. That the best interests of the public welfare demand the highest attainable standard of educational qualifications, skill and ability, as well as of professional and personal honor, integrity and morality, among those engaged in the practice of medicine.

2. That it is the duty of the State to exercise the inherent plenary power and authority which it possesses for the protection and promotion of the public welfare, to secure such standard.

3. That uniform State laws, exacting of every one aspiring to practice medicine proof of personal fitness and professional competency, would prove the most potent agency in improving the standard of medical education and in enhancing the dignity and usefulness of the medical profession.

Specifically, I wish to suggest:

That the American Medical Association should put itself upon record at this session as recommending the extension of the period of study to four years and of attendance upon lectures to three full terms, with ample hospital practice and clinical instruction, as the requirements for graduation in medicine;

That the Section on State Medicine be instructed to frame a law for the regulation of the practice of medicine, which law, when endorsed by the Association, shall be the standard with which all existing legislation on this subject should be made to conform as speedily as practicable, and which shall be urged for adoption by those States where no such law now exists.

Whether such a law should establish a single State Examining Board, which, independent of any influence from the teaching interest through a diploma or otherwise, should admit to practice only upon actual examination; or whether the diploma of a college in good standing should be accepted as proof of necessary qualifications, are questions for earnest consideration. If the policy of those States which are enforcing a standard of requirements whereby to test the good standing of a college, be continued in good faith and with as much effect during the next

twenty years as during the past three, there would be little to choose between the two modes. But before an independent Examining Board, intent only upon ascertaining the applicant's moral and professional fitness, the graduates of all colleges would stand alike upon their individual merits. The effect would be to encourage the tendency to make the science of medicine as exact as it is complex, and to obliterate much of the element of empiricism which still justifies the use of the term "art" in its designation.

By either mode the State may promote the public welfare, and through a wise regulation of the practice of medicine elevate the standard of medical education, which is the foundation of the practice. And it seems to me especially fitting that the American Medical Association should again make its influence felt in this direction. Its earliest labors, and among its most important and successful, were devoted to securing a "uniform and elevated standard of requirements for the degree of Doctor of Medicine." Its further efforts at this time should be attended with even greater success.

ADVANCES AND DISCOVERIES IN PREVENTIVE MEDICINE.

While there has been this marked and gratifying improvement in the branches thus far considered—now clearly recognized as belonging to the domain of State Medicine—the past year has witnessed equally satisfactory practical advances in the more familiar province of Preventive Medicine. The number of sanitary organizations, both legal and voluntary, has increased; the contributions to sanitary literature have been numerous and valuable; and professional and public interest and effort have been enlisted as never before in attempts to remove or abate the preventable causes of disease, and to discover and perfect safeguards against the great pestilences. To a great extent this has been stimulated by the prevalence of Asiatic cholera in some parts of Southern and Western Europe, and the consequent dread of its extension to our shores. Fortunately, the apprehensions entertained at the date of the last meeting of the Association have not been realized, and the country has been practically free from any general or noteworthy epidemic, notwithstanding the prevalence of smallpox in some parts of Canada.

State and Municipal Boards of Health have generally done effective work in their respective spheres. In some States a general sanitary survey has been undertaken, and in many cities, towns and villages house-to-house inspections have been pushed, and the nuisances and defects thus disclosed, both of a public and private nature, have been largely remedied. As was frequently remarked during the past summer and fall, an amount of general and local "cleaning up"—which is the essence of sanitation—was accomplished, which could not fail to have an appreciative effect upon the public health. Unfortunately, the subject of the registration of vital statistics is in such an imperfect and unsatisfactory condition in this country that it is not possible to give any comparative figures by which to measure this gain for the whole country; but the mortality returns of the large cities generally show a reduction in the death-rate of 1885 as compared with the average death-rate for several years previous.

Four more State Boards of Health were established in 1885–86, the list now comprising the following thirty-one organizations, the dates of the establishment of which are prefixed: In 1869, Massachusetts;[1] in 1870, California; in 1872, Michigan, Minnesota; in 1873, Alabama, Wisconsin; in 1874, Maryland; in 1876, Colorado, Louisiana, New Jersey; in 1877, Illinois, Mississippi, Rhode Island, Tennessee; in 1878, Connecticut, Kentucky, North Carolina; in 1879, Delaware, Iowa; South Carolina; in 1880, New York, West Virginia; in 1881, Arkansas, Indiana, New Hampshire; in 1883, Missouri; in 1885, Dakota, Kansas, Maine, Pennsylvania; and in 1886, Ohio.

These Boards, it is proper to remark, owe their existence largely to the influence of the American Medical Association, which has for years actively promoted their organization.

While States and municipalities are thus generally exerting themselves for an efficient protection of the public health, our National health service remains in a very unsatisfactory condition. Notwithstanding the efforts of the profession generally and of many health organizations to secure action by Congress for the remedy of this condition of affairs, nothing definite has yet been done. Three different bills have been introduced during the present session, but there is little hope of either of them receiving favorable consideration.

One thing remains clear: Whether by the rehabilitation of the National Board or by the creation of a new organization, it is the imperative duty of Congress to complete the health defenses of the country. Municipalities have their legitimate sphere within which they alone can act and are responsible, and next beyond which the authority and resources of the State are demanded. But neither municipalities nor States can protect themselves against foreign pestilences without the assistance of the National authority, nor can they properly guard themselves against inter-State infection or contagion without the coöperation of the same authority. I have already dealt with this subject fully in an address before the National Conference of State Boards of Health in 1884, on the "Prevention of the Introduction of Asiatic Cholera," in a report made in the early part of the present year on our "Coast Defences against Asiatic Cholera," and elsewhere.

Among the voluntary organizations the work of the American Public Health Association during the year has been of more than usual practical value. The Lomb Prize Essays, and especially the "Report on Disinfectants and Disinfection," are substantial additions to sanitary knowledge. The Sanitary Council of the Mississippi Valley has not been called upon for action, but its organization is preserved ready for an emergency. Nothing definite was accomplished

[1] This Board is now separated from the Board of Lunacy and Charity, with which it had been associated since 1878.

at the last National Conference of State Boards of Health, which was held during the Washington meeting of the Association.

Abroad, a second series of sessions of the German Cholera Conference was held in Berlin, May 5–7, 1885, at which the subjects of the etiology and prevention of cholera were discussed by Koch, Pettenkofer, Virchow, Hirsch, and others, but without eliciting much which was new, or settling any of the mooted questions. Prof. Koch summarized the chief measures to be taken against the disease, and which, so far as they go, do not differ from those adopted by good sanitary authority in this country. They dealt, however, exclusively with the local safeguards of sanitation, disinfection, isolation, supervision, etc., and ignored measures of exclusion of the disease by notification, maritime sanitation, supervision of ports of embarkation, and quarantines of inspection, observation and sanitary work at ports of arrival.

Following the adjournment of the Berlin Conference, an International Sanitary Conference was held at Rome under the auspices of the Italian Government. Although its paramount object was the discussion of questions relating to the prevention of cholera, the subject of yellow fever was also considered in the same relation, through the efforts of the American delegate, Dr. George M. Sternberg. The delegates were of two classes, diplomatic and technical or professional, and at an early stage a Technical Commission was formed, which finally agreed upon substantially the same measures that advanced sanitarians in this country consider necessary for the limitation and suppression of cholera, yellow fever, and other communicable diseases which, under bad sanitary conditions of vessels and places, may become epidemic. The exceptions to such agreement were the English delegates, composed of gentlemen whose experience with cholera had been mainly limited to India, and who, in consequence, deny the communicability of the disease through human intercourse, deny the infectiousness of cholera dejecta, and pronounce disinfection a farce and unscientific.

The Conference adjourned to meet again in the fall, but this intention was not carried out. As I have heretofore observed, the practical benefit to be derived from these conferences—in the absence of authority to make an international sanitary convention, binding upon all interested—is the interchange of views, the dissemination of knowledge, and the formulation of such views and knowledge. So far as this country is concerned, they have not changed the status in any respect. We must continue to rely, for the exclusion of cholera and other Old-World pestilences, upon such precautionary measures as can be secured at ports of arrival.

The International Congress of Hygiene, which has been held successively at Brussels, Paris, Turin, Geneva, and the Hague every alternate year for the past ten years, and which should have been held this year at Vienna, has been postponed until 1887, for some reason not yet announced.

With the object of determining to what extent such precautionary measures may be secured, especially against Asiatic cholera, I have made an inspection of the quarantine maintained upon the Atlantic and Gulf coasts from the St. Lawrence to the Rio Grande. The results of this inspection have been published by the Illinois State Board of Health, and as the report is accessible to the members I will confine myself on this occasion to the following conclusions: I am more than ever convinced, since completing this inspection, that Asiatic cholera, as well as small-pox and yellow fever, may be effectually excluded from the United States by an intelligent use of the agencies still at our command. This is not a matter of speculation or theory. A great advance has been made in practical sanitary science since 1878—notably in the administration of the maritime quarantines generally, and especially in the improved safeguards at the mouths of the St. Lawrence and the Mississippi. A quarantine of exclusion of the three principal epidemic diseases is now a matter of certainty, depending upon prompt notification of threatened danger; vigilant supervision over commercial intercourse with infected localities; inspection of all immigrants and the enforcement of their vaccinal protection; sanitation and purification of infected vessels and cargoes; isolation of those sick with these diseases; the surveillance of suspects during the periods of incubation; and the employment of other well-defined preventive and precautionary measures which now constitute the best modern sanitary practice as applied to maritime quarantine.

It must be repeated, however, that the coöperation of the National Government with State and local authorities, as well as its independent action in matters beyond the reach of States and municipalities, are indispensable to the proper protection of the public health. The duty of Congress in this connection is even more pressing than the responsibility of providing defense against an armed enemy. This latter is a more or less remote contingency, but the assaults of foreign pestilence are constant and continuous.

Thus far we have been providentially spared an invasion of the Asiatic plague which is now filling Great Britain and Europe with anxiety, and the real extent and prevalence of which we do not know. The State Department has, within a few days, been requested to appoint sanitary inspectors at the United States consulates at Genoa, Naples, Marseilles and Venice, with instructions—in the language of the dispatch—"to give prompt information of the appearance of cholera in any of the consular districts named, and to report the departure of emigrants and merchandise for the United States from infected districts." But it is already known that the disease exists, and has for months, in several provinces of Italy, including Venetia—cases having been reported in Venice even in January last; it is known that the entire Mediterranean littoral is practically an "infected district," and that the northward march of the pestilence is causing alarm in Austria, Germany, Northern Europe generally, and in Great Britain. The appointment of sanitary inspectors at one French and three Italian ports hardly seems adequate to the occasion. At no time since cholera was announced at Toulon in 1883 has this continent been in as seri-

ous danger of an invasion of the disease as it is now. And not alone does cholera threaten, but small pox is epidemic in many districts with which we are in direct and frequent communication.[1]

I cannot close the consideration of this branch of my subject without a brief reference to the obvious necessity of National control of immigration. Sanitary science and public hygiene touch both the individual and the National life at many points. It is a question which is daily and hourly becoming more urgent—as the columns of every issue of every newspaper show—how much longer it will be safe or prudent to continue the unrestricted influx of the vicious, the insane, the pauper and the infected immigrant into our midst. I will not attempt to discuss so momentous a question at the present time and amid the multiplicity of other topics. I have already on more than one occasion expressed my views concerning it. Neither the sanitarian nor the statesman can afford to longer ignore its consideration.

The By-Law calls for a report on the "advances and discoveries of the past year in the branches of science included" in the Section. While the workers have been active and their labors faithful in many directions, it is to be feared that the discoveries in preventive medicine are too intangible or too incomplete to warrant much of positive statement. There are new theories and claimed discoveries concerning malaria, cholera, yellow fever, hydrophobia, tuberculosis and other diseases. But whether Klebs and Crudeli or Marchiafava or Celli have found the malaria-germ; whether Koch and his followers or Klein and his *confrères* are correct as to the causative connection of the comma bacillus with Asiatic cholera; whether Domingo Freire and Carmona are to share the obloquy of Ferran or the honors of Pasteur; whether bacteria themselves, or only their products, or whether neither one nor the other, but ptomaines and leucomaines produced by normal vital action, are the morbific agents of disease against which the sanitarian must direct his energies—these and similar questions are yet *sub judice*.

The etiology of such common diseases as diarrhœa and diphtheria are still equally obscure, although some light seems to be thrown upon the origin of certain outbreaks of the latter disease by the observations of Dr. Cresswell, who, in a paper recently read before the London Epidemiological Society, thinks he has traced six outbreaks of diphtheria, for which there was no other obvious explanation, to persons suffering from chronic tonsillar inflammation following attacks of diphtheria, and concerning whom he asks: "Do the violent reactions of the tonsils of these persons to weather changes involve likelihood of rendering them diphtheritically infectious?" In other words, May diphtheria become chronic and liable to periods of infective recrudescence? The question acquires additional importance for the medical officer of health from the fact that the disease is unmistakably increasing in frequency and in its influence upon the death-rate.

On the other hand, bacteriology may fairly claim to have advanced the science of water analysis, which no longer depends upon chemical and microscopic examination, but for the purposes of the sanitarian must be submitted to the further test of biologic experiment. It has also certainly been of service in raising the art of disinfection to the level of an exact science, and the labors of Sternberg, Smart, Salmon and others in the bacteriological field in the United States, are not unworthy of comparison with the work in Europe.

A reaction, however, seems to be setting in against the sweeping claims of the bacteriologists, and the assertion, for example, that the typhoid bacillus, after twenty years of experiment, has at last been demonstrated to be the true typhoid germ, will not stand the criticism of Prof. von Pettenkofer, who, in a recent address on the relationship between bacteriology and epidemiology, points out that the entire environment of a micro-organism and all the conditions which influence its growth, development and results, must be taken into the account, and that the mere fact of setting up a certain train of symptoms in a lower animal analogous to those observed in the human subject is by no means conclusive proof that the specific fungus transmitted from the one to the other is the sole cause of the disease in the higher organism. In this address, which, like all of his contributions to scientific hygiene, is replete with food for thought, Pettenkofer asks what the study of bacteriology has done in advancing practical sanitary measures, and pertinently cites Lister's antiseptic system and Pasteur's rabic inoculation as instances of practical results accomplished without demonstrating the existence of a special form of bacteria or the actual morbific agent. He might still more strikingly have referred to Jenner's immortal discovery.

Concerning this subject of vaccination I beg to call the attention of the members to the additional proof cited in recent reports of the Illinois Board, of the superiority of humanized virus, not too far removed over bovine, in cases demanding promptness and certainty of action. I think this practical point cannot be too strongly insisted upon, and it may be well to repeat, as a fitting conclusion of this address, my remarks on this subject in the paper on "The Relations of Small-Pox and Vaccination" in the Fifth Annual Report of the Board (p. 502). Treating of the promptness of action in the face of exposure it is there shown that humanized virus may be depended on much more certainly than bovine to act promptly. Usually on the second or third, very seldom so late as the fourth day after the insertion of good humanized virus, the papular stage of vaccination will begin, and be followed, with almost unvarying regularity, by complete development of the vesicle on the eighth day, and by the subsequent appearance of the "index of safety"—the specific inflammation of the skin, or stage of areola. Bovine virus, on the contrary, is subject to all degrees of delay, even to periods of weeks. During the epidemic of 1881–83 this defect of bovine virus was more than once

[1] It is worthy of passing note that cholera has invaded a new continent within the past few months. Its introduction into Australia, where it had been hitherto unknown, furnishes a fresh proof, if any were necessary, of the transportability of the contagion, of the necessity of supervision over maritime travel and commerce, and of the importance of being prepared to meet and properly deal with an infected vessel upon its arrival.

followed by serious consequences. Not alone were lives lost among the exposed members of isolated families, where vaccination was resorted to early enough to have averted an attack had the virus acted promptly, but epidemic outbreaks followed under similar circumstances—that is, in localities where, upon the discovery of the first case, vaccination of all unprotected or exposed was at once resorted to, with bovine virus, but which either proved so tardy in its action, or so totally inert, as to allow the disease to gain a foothold.

"The loss of a day," says Seaton in his Hand-book of Vaccination, "may be the loss of a life." Hence the necessity for using virus which will act promptly, and not remain latent three, five or any other number of days. Recent experience corroborates observations made during the period from 1866 to 1873, while Sanitary Superintendent of the city of Chicago, to-wit: That it is never too late to vaccinate after exposure, short of the actual appearance of the variolous eruption. If the vaccination be performed within three or four days after exposure, and the areolar stage, the index of safety, be reached in the normal time, an attack of small-pox will almost invariably be averted. With every additional day's delay the protective power will be weakened; but, contrary to the opinion laid down in the text books, experience proves that this protective power is not entirely exhausted until the vaccination is deferred at least up to the beginning of the febrile stage of small-pox.

Of 323 cases of small-pox, tabulated in the preceding pages, in which the patients had never been vaccinated until after exposure, 305 recovered and 18 died, being a less mortality rate than among the 690 cases, which occurred among those who had been vaccinated before exposure only. In some of these cases vaccination was not attempted until shortly before the beginning of the eruptive stage. A reference to the Notes appended to the Tabular Statement of 1,100 cases, pages (296–327 inclusive), will show many instances where vaccination after exposure was successfully resorted to after the expiration of the period ascribed by Marson, Seaton, and others, as the limit beyond which, "whatever the local success of the vaccination, no constitutional effects will be imparted." In these Notes will also be found the details of cases where the attempt to vaccinate with bovine virus was only successful after one or more repetitions, with loss of valuable time or where such attempt finally proved wholly unsuccessful. With the exception of one group of six cases—a family vaccinated by the father, a layman—all the vaccinations performed with humanized virus, after exposure, were successful, and the patients recovered, with mild attacks of short duration. But of such vaccinations with bovine virus, over 40 per cent. were failures—that is, in the sense of manifesting activity before the variolous disease began—and of this 40 per cent. of failures there was 30 per cent. of fatal results.

The general tenor of these views is also supported by the figures given in the January number of the *American Journal of the Medical Sciences*, quoting from the "Arbeiten aus dem Kaiserlichen Gesundheitsamte:" "The increase of unsuccessful vaccinations in the German Empire was due to the vaccinations in the Grand Duchy of Hesse, where, owing to the introduction of animal lymph, the number of successful vaccinations decreased from 97.31 per cent., in 1881, to 63.44 per cent., in 1882." And the German Commission on Vaccination report—"*For* vaccination with humanized lymph may be mentioned the certainty of its action, the symplicity of its machinery, the inexpensive manipulation of the lymph. *Against* the use of animal lymph may be taken the less certainty of its results, a more complicated machinery and the greater cost of production of lymph." Nevertheless the Commission conclude that animal "is capable of supplying the place of humanized lymph." Commenting upon this, Dr. Buchanan, the medical officer of the Local Government Board, in his last report (1884) says: "In England, these are identical when the operation is done directly from arm to arm, or calf to arm; thus, two operators at the Animal Vaccine Establishment, in London, produced an average of 988 vesicles for every 1000 insertions of calf lymph made on infants. Now the employment of stored lymph reduces this average by some 20 or 30 per cent., whether humanized or animal lymph be used. Direct vaccination from calf to arm is only possible in large centres of population. In sparsely inhabited districts the use of stored lymph becomes a practical necessity, unless arm-to-arm vaccination be resorted to; hence, there is much probability that the decision of the German Commission will tend to reduce the condition of the German people, as to protection against small-pox, to the condition of the inhabitants of the Grand Duchy of Hesse."

I see no reason—but the contrary—for modifying the judgment expressed in the eleventh of the propositions, concluding the paper above referred to:

"That the relative advantages of bovine and of humanized virus are still *sub judice* as to the most important point, namely their comparative protective powers. Humanized virus has been tested for more than eighty years; bovine for about sixteen. The former descended in an unbroken line of vaccinations from the original operations of Jenner, still produces the same typical results, the same regular sequence of phenomena, as those obtained by Jenner himself; the latter produces almost as many varying results as there are propagators. . . . In cases of emergency, where promptness of action is important, the preference must be given to the humanized."

ORIGINAL ARTICLES.

SYPHILIS IN ITS RELATIONS TO DENTAL AND ORAL SURGERY.[1]

BY G. FRANK LYDSTON, M.D.,

PROFESSOR OF SURGERY IN THE NORTHWESTERN COLLEGE OF DENTAL SURGERY; LECTURER ON GENITO-URINARY AND VENEREAL DISEASES IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, ILLINOIS.

The time is long since past when an apology was necessary for bringing a subject of general surgery

[1] Read in the Section of Dental and Oral Surgery, on May 4, at the Thirty-Seventh Annual Meeting of the American Medical Association.

before a convention of dental and oral surgeons. Dental and oral surgery has, of late years, come to be recognized as a specialty of general surgery, and most justly so. The progressive dentist of to-day is earnestly striving to attain all of the qualifications necessary to the true specialist, who has been so aptly described as a practitioner "who knows something of everything, and everything of something." There is perhaps no specialty that involves more of the principles of general medicine than that of dental surgery. It is greatly to the credit of the dental profession that it is now recognizing this fact.

There is perhaps no general disease which figures as a more important factor in dental and oral practice, than syphilis. The prevalence of this disease, as revealed to the general surgeons and specialists of our large cities, is somewhat appalling, and when we stop to consider its insidiousness, the importance of the subject is at once appreciated. The oral symptoms of the disease, in well-managed cases, are nowadays the most important of all the local manifestations which characterize its active period. The reasons for this are at once apparent. The vast majority of well-treated cases will escape skin lesions altogether, or at most will have nothing more severe than the roseola, which is of the most trifling importance, but very few indeed will be found to go through a course of syphilis without being afflicted with oral symptoms of greater or less severity. Such, at least, has been my experience in quite an extensive field of observation. The argument may be advanced that this statement applies only to the better class of patients; but it is just this class whom the dentist is most frequently called upon to treat. When the facts seem to controvert the proposition which has been advanced, they seem to be the result of causes independent of the intrinsic severity of syphilis. Another consideration that tends to enhance the importance of the oral syphilides, is the fact that it is through these lesions that innocent persons are most apt to become infected.

In the matter of prophylaxis of oral lesions in syphilis, the function of the dentist is acknowledged by progressive specialists, to be of paramount importance. The patient who would go through a course of syphilis and of treatment therefor, with a minimum of suffering, will place himself in the hands of his dentist, as preparatory to undergoing strictly medicinal treatment. The patient with tartar about the teeth, carious cavities, or sharp or rough surfaces upon the teeth, jutting against the buccal mucous membrane or tongue, is almost sure to suffer from luxuriant crops of mucous patches, or destructive ulcerations. In addition to this inconvenience, we will find that under the faulty conditions mentioned, reflex excitation of the salivary and mucous glands is constant, and when, under such circumstances the stimulating effect of mercury is superadded, ptyalism or even stomatitis, is quite likely to occur. With the teeth and gums in bad condition, the patient is usually so intolerant of mercury that he cannot take a sufficient quantity to benefit his syphilis.

In passing, it may be well to caution against carelessness in the matter of cleansing all instruments used in dental practice, whether the patient be known to be syphilitic or not. Syphilis is so widely disseminated, even among respectable people, that it is unsafe to run any risk in the matter. The oral lesions of syphilis are very actively contagious during the early months of the disease, and it has been supposed that they retain their contagious properties for a much more prolonged period than do other lesions. A lesion so insignificant as to escape attention, may give rise to a highly contagious secretion. This secretion becomes mingled with the saliva and may adhere to instruments for an indefinite time. Just how long the contagium may retain its vitality is unknown, but it is probably a prolonged period. I am happy to say that very few, if any, accidents have been laid at the door of the dentist, but that fact should not render him one whit less cautious. I have myself seen one case in which there were strong grounds for suspicion of infection by dental instruments. It is to be said, however, that the dentist in question was not a reputable member of the profession.

A certain preventive of such accidents is to dip all instruments in pure carbolic acid, both before and after using, in addition to the ordinary measures of cleanliness. Ordinary solutions of antiseptics are too weak to be efficacious. Iodine and bichloride of mercury corrode the instruments, and the flame of the alcohol lamp destroys their temper, hence pure carbolic acid is the most efficient and available antiseptic. If prepared in the manner suggested, infection from instruments is impossible. A safe rule in surgery is to avoid the use of an instrument which we would hesitate to put in our own mouths, or thrust in our own flesh, if necessary.

In beginning the discussion of syphilis as an etiological factor in dental and oral lesions, it is proper to consider the question of hereditary syphilis. This is a subject of much more importance to the dentist than is generally supposed. It has long been well understood that syphilis is capable of producing marked disturbances of the nutrition and development of the teeth. This fact has been developed chiefly through the efforts of the renowned syphilographer, Mr. Jonathan Hutchinson, of London. It may seem presumptious to criticise anything emanating from so eminent an authority, but it is my humble opinion that Mr. Hutchinson's description of the teeth and facies of the syphilitic child, has tended to mislead us. Observe his original description: "The permanent teeth are irregular and defective; they are small, vertically notched, rounded at the corners or pegged, and are often marked with seams and ridges or lines, of a dirty brownish color. These characters are especially marked in the central incisors, which are the test teeth." He further says: "Next in value to the malformation of the teeth, are the state of the patient's skin, the formation of his nose and the contour of his forehead; the skin is almost always thick, pasty and opaque. It also shows pits and scars, the relics of former eruptions, and at the angles of the mouth are radiating linear scars, running out into the cheeks. The bridge of the nose is almost always low, and broader than usual; often it is remarkably sunken and expanded. The fore-

head is usually large and protuberant in the region of the frontal eminences; often there is a well-marked depression just above the eyebrows. The hair is usually dry and thin, and now and then the nails are broken and splitting into layers."

It would be interesting to know how many cases each of the gentlemen present have had under observation, that tallied with the above description. Exceptionally, indeed, has it been my privilege to observe such a *tout ensemble* of symptoms, yet it has been my lot to observe and treat many unequivocally syphilitic children. It has been the custom to look for Hutchinson's test teeth; seldom indeed are they found; ergo, the patient is not syphilitic.

Now, as a matter of fact, the children who are so badly affected with syphilis as those described by Hutchinson, seldom arrive at the period of dentition, for the vast majority of the victims of severe hereditary syphilis fail to survive the third month after birth. It is the child who suffers from attenuated hereditary syphilis who survives, and it is with him that the dentist has to deal; hence the extreme cases described by Hutchinson are not fair criteria of the effects of syphilis upon the teeth, as seen in dental and oral practice, although such cases may be met with.

When I use the term attenuated syphilis, I mean hereditary infection not severe enough to cause typical syphilitic lesions, but severe enough to cause malnutrition. Like all conditions of perverted nutrition occurring during the period of dentition, that produced by hereditary syphilis gives rise to defective and irregular development, faulty texture, and early decay of the teeth. The syphilitic cachexia is preeminently liable to produce such results, but unfortunately there is nothing characteristic in the resulting physical appearances, in the greater proportion of cases. Very frequently (perhaps generally) if the constitutional element be recognized at all, it is dubbed "scrofula" or "rickets!" Old Proteus masquerading under a respectable name; but none the less susceptible to the eloquent persuasion of our reliable friends, mercury and iodine. I venture to say that in quite a proportion of troublesome cases of dental caries and irregularities in children, constitutional treatment of this kind will prove a very useful auxiliary to the efforts of the dentist.

In the consideration of this important question, there are several facts to be borne in mind by the dental surgeon. These may be formulated as follows: 1st. The great frequency of syphilis, even in refined society. 2d. The recklessness as to the consequences of matrimony exhibited by the average syphilitic patient. 3d. The great percentage of danger of hereditary transmission of even remote syphilitic taint. 4th. The large number of tainted children that he must necessarily be called upon to treat as a consequence of the foregoing propositions. 5th. That Hutchinson's test teeth and facies syphilitica are by no means a *sine qua non* in hereditary syphilis. It may be readily observed that the duty of the dental surgeon is not completed with the local treatment of such cases as those under consideration, but he should recommend a suitable course of constitutional treatment. The time is coming when every dentist may not only recommend, but will be competent to carry out, such a course in detail.

The co-relation of so-called struma and hereditary syphilis has of late years come to be suspected, and the tendency in certain quarters to regard many cases of alleged scrofulous lesions as remote manifestations of syphilitic taint, is rapidly gaining ground. This, indeed, was tacitly admitted years ago by Astley Cooper, whose favorite remedy for scrofula consisted of the bichloride of mercury, in Huxham's tincture of cinchona bark.

In connection with the subject of hereditary syphilis, it is well to remember that there is such a thing as late hereditary syphilis, in which, while the patient escapes all manifestations of the disease during childhood, save perhaps malformed or crumbling teeth, lesions of the mouth, jaws, and nasal cavities appear later in life. Ziessl has collected over one hundred of such cases, and has reported a number observed by himself. These cases strongly resemble tertiary acquired syphilis, and appear, as a rule, about the period of adolescence. Osseous and nervous lesions of a severe character usually predominate, the osseous lesions having a special predilection for the nasal and palatal bones. I recall a case of caries of the skull of this character.

It may be remarked in passing that many cases of ozæna, or fetid nasal catarrh, with resulting necrosis or caries of bone or cartilage, are attributed to simple catarrhal inflammation, the diagnosis being based mainly upon the absence of specific history or typical lesions. Most of the cases are the result of acquired syphilis, but some of them undoubtedly are late manifestations of hereditary taint. As far as my personal opinion is concerned, I have been unable to convince myself that simple catarrh is ever the cause of nasal or palatal necrosis or caries. I recall two cases in which failure to accept this view on the part of the family physician, resulted in serious and irreparable disfigurement. To apply this to dental and oral practice, it is only necessary to remember that necrosis, or caries of the palate or jaws, accompanied by or dependent upon, alleged fetid nasal catarrh or ozæna, can, with almost absolute safety, be pronounced syphilitic. It must be borne in mind, however, that such lesions may represent the errors or misfortunes of a past generation, and may therefore cast no discredit upon the respectability of the patient.

The primary lesion of acquired syphilis very rarely occurs within the mouth; chancre of the lip being more frequent. The dental surgeon will therefore seldom meet with it. I have already alluded to a case in which infection by dental instruments was the presumable origin of the disease. Unfortunately, I did not have an opportunity to observe the case from its inception. At the time I first examined the patient, secondary sore throat and mucous patches had already appeared. A small sluggish indurated ulcer existed upon the gums, below the lower middle incisors. The glands beneath the jaw were the first and only glandular changes to attract the attention of the patient, and they were disproportionally en-

larged as compared with the rest of the glandular system. It was claimed by the patient that the sore upon the gums appeared about three weeks after having had her teeth cleaned and put in order. The "kernels," as she termed them, beneath the jaw, appeared about a week or ten days later. There were no evidences of venereal infection, and as far as physical appearances went she had never been exposed to venereal contagion.

I recall another case of interest in which the primary lesion appeared upon the tip of the tongue. There was very little induration about the sore, which appeared as a shallow ulcer the size of a split pea, with a grayish base covered with an exudate very like a diphtheritic membrane. The glands under the jaw enlarged, and the case ran the ordinary course of syphilis. The source of infection was traced, and I found mucous patches in the mouth of the woman from whom the disease was contracted. She herself gave a clear history of having contracted her syphilis from her husband. In this case, a diagnosis could have been made in no other way than by tracing the source of infection, and by observation of the subsequent course of the case, inasmuch as the primary lesion was decidedly atypical.

The oral symptoms of the secondary or active period of acquired syphilis are of the most vital importance to the dental surgeon, by virtue of 1st, their contagiousness; 2d, their liability to be mistaken for innocuous lesions; 3d, the prolonged period during which they are apt to develop at any time, and often without the patient's knowledge; 4th, the necessity for nearly all syphilitics to consult their dentist sooner or later, during the active period of syphilis. The later, or so-called tertiary lesions, are so destructive that they usually announce their presence at once; and more important still, they are probably rarely contagious.

The lesions of the mouth occurring during the course of constitutional syphilis, may be briefly classified as: 1st. Excoriations or erosions, and rhagades, or fissures, occurring with or without more or less generalized inflammation of mucous membrane. 2d. Mucous patches and tubercles. 3d. Early ulcerations, superficial or deep. 4th. Late ulcerations, superficial or deep. 5th. Early and late bone and periosteal lesions.

Excoriations or erosions and fissures are the most dangerous to the safety of healthy persons, from the fact that they are often precisely identical in their physical characters with similar lesions from simple causes. Their secretion, however, is extremely contagious, and the act of kissing may be followed by disastrous results. Fortunately, these lesions are usually quite irritable, occurring, as they generally do, in smokers, and they consequently usually announce their presence most emphatically. These lesions may appear at any time during the course of syphilis, but are most often seen during the first year. They are due to the co-existence of local irritation with constitutional depravity, and as both of these conditions occur from simple causes, it is obvious that great caution is necessary in the matter of diagnosis.

These erosions and fissures are distinguished in most cases by the generally reddened and tender state of the mucous membrane. Unlike other syphilitic lesions, they are sometimes extremely painful, the suffering being greatly disproportionate to the actual lesion present. A diagnosis of syphilis is not warranted in these lesions unless confirmed by more positive indications than those afforded by the lesions themselves.

The typical mucous patch is the most frequent of the oral lesions of syphilis. It represents a papule upon a mucous surface, and also represents the foundation of most of the ulcerative lesions of the disease, *i. e.*, a localized proliferation of cells. It is a true hyperplasia of tissue, and this is an important element in the diagnosis. The patch is elevated, of a grayish or yellowish color, and varies in size from a scarcely perceptible point to a patch or collection of patches the size of a silver quarter, rarely larger. There is no inflammatory area about it as a rule, but if irritated, the ordinary characters of inflamed mucous membrane will be presented.

There is a peculiar form of mucous patch which is sometimes seen about the borders of the tongue, that merits special description. It is the most obstinate of the lesions of the tongue, excepting, perhaps, the rare form known as syphilitic psoriasis of the tongue. It appears in the form of a furrow or cleft in the border of the organ upon one or both sides. This furrow has an appearance resembling a puckering in or involution of the mucous membrane. The borders of the lesion are rounded, and covered with a fibrous layer of cloudy epithelium, which looks very much like a thin film of coagulated albumen.

The mucous tubercle is an exaggerated mucous patch, and consists of a similar but more extensive aggregation of cells. Either the patch or the tubercle may go on to ulceration.

There is a peculiar tendency in some cases of mucous patches to a circinate arrangement very like ordinary ringworm of the skin in form. This is due to a coalescence of circular patches, and is especially marked upon the roof of the mouth, involving both the hard palate and velum. When this circinate eruption is seen in the mouth, nothing more is wanted to complete the diagnosis of syphilis, although corroborative evidence should always be sought for.

The special points which are to be sought for in the diagnosis of syphilis will serve in all cases, save in late syphilis, where we may be compelled to depend upon the history and the appearance of the lesions alone.

These evidences are, First, A diffuse passive congestion or hyperæmia of the fauces and pharynx, without corresponding pain in deglutition. Should the patient have a bad cold at the time, this sign ceases to be of great value. Second, Alopecia or falling of the hair, in the absence of parasitic disease. Third, Coppery spots or cicatrices; the remnants of faded skin lesions. Fourth, The presence of scabby spots or pimples on the scalp. Fifth, Enlargement of the lymphatic glands, those of the neck being especially accessible. Enlargement of the sub-occipital glands is pathognomonic. Sixth, A possible

history of bone pains and aches, worse at night; this sign being more important in late syphilis. Seventh, The presence of circumscribed periosteal swellings or nodes.

It will be observed that most of these signs can be sought for and often found by the dentist, without examination of any other regions than the oral cavity, pharynx, head and neck. Indeed, a quite thorough examination may often be made, without exciting suspicion, if such a course be politic. For obvious reasons, I do not include some diagnostic points for which the general surgeon would seek. An innocent and to all appearances quite casual search for evidences of such diseases as scrofula, rheumatism and catarrh may develop some startling and valuable results in dental and oral practice. When the patient is sufficiently cosmopolitan or candid, the history of infection will clear up any possible obscurity. A useful point in the diagnosis is that the patient is usually distressingly healthy aside from the local manifestations of disease, and even these may be treated with great indifference.

There is a peculiar lesion of the tongue to which allusion has already been made, that merits special attention, although it must be confessed it is a lesion that is rarely seen. I refer to syphilitic lingual "psoriasis." It closely resembles simple psoriasis of the tongue, and is apt to make its appearance late in the course of the disease, when nothing but the history of the case remains to assist in the diagnosis. It consists of a thin whitish pellicle, due to thickened epithelium, the mucous membrane beneath having a peculiar scalded appearance. Quite often, the tongue presents large irregular patches of scalded looking mucous membrane. The borders of the tongue are most apt to be affected. That these lesions are dangerous, is shown by a case reported by Fournier, in which a patient with this lesion infected a healthy woman by kissing, five years after he contracted the disease. It is the most obstinate of lesions, and will persist after all other evidences of syphilis have yielded to treatment. I have a case at the present time that is absolutely intractable to therapeutic measures.

There is a form of ulceration of the mucous membrane which occurs in debilitated states of the system, and is popularly known as "canker." It is met with especial frequency in nursing women. This is important, in view of the fact that it may be mistaken for syphilis, and *vice versa*. These erosions or ulcerations are superficial in character, usually multiple, and appear in successive crops. They are very difficult of cure sometimes, and require a treatment which is the direct antithesis of that required for syphilis. The eruption is probably a herpes, the basis of which is a neurosis, and in its treatment nervine tonics are indicated.

These lesions are preceded by simple hyperæmia, with little or no swelling and evidently no new formation. Their color is usually pearly white, or, if greatly inflamed, they present a yellowish base. They look very much as if the mucous membrane had been snipped out with scissors. They are often quite painful. There are no evidences of constitutional taint in the form of glandular engorgement, excepting in some strumous cases, in whom a diagnosis may be entirely dependent upon the crucial test of treatment. Under mercury and iodine, these simple cases will get worse. A complete change of air and scene may be necessary for their cure. It is not well to be hasty in the matter of diagnosis, but it is indeed a safe rule that, to the surgeon, no one should be above suspicion.

Some of the very late lesions of the mouth in syphilitic subjects are very difficult of diagnosis, the history alone being all that we can depend upon. These lesions are slight erosions and exudations, and, as a rule, are not contagious. Oftentimes, perhaps, they are not really syphilitic, and depend upon, first, exhaustion and malnutrition produced by the previous general infection; second, mercury in too free doses. Most often, both of these causes are contributing factors. It should be remembered that because a patient has once had syphilis is no reason that he should not thereafter have simple and respectable lesions of the oral cavity. The excessive use of mercury, or even its moderate use, in special cases of idiosyncrasy, may produce lesions of the greatest importance to the oral surgeon. Much uncalled for abuse has been heaped upon this valuable drug, but after all, it is sometimes responsible for morbid changes, especially in the mouth. It is debilitating in large doses, and as eliminated by the salivary glands, it is apt to be irritating. I see many cases of supposed mucous patches and syphilitic ulcerations which I am inclined to attribute to mercury. When, therefore, I find that the mouth not only does not improve, but really grows worse, under mercury, I infer that the trouble is really due to the drug, and substitute iron and tonics. The horribly fetid odor of the breath, due to decomposing fat, and the sponginess and tenderness of the gums, will indicate the probable cause in these cases, for lesions due to syphilis *per se* rarely fail to improve under mercury, when carried to its full physiological effects. It is certainly a suggestive fact that mercury is capable of preventing skin lesions in a large proportion of cases of syphilis; but does not seem to completely prevent oral manifestations in the majority of cases. While not yet prepared to formulate a rule, I am free to say, that the patients whose mouths have given me the most trouble, have been those to whom mercury has been given most freely.

It has been noted by dental surgeons that mercury is capable of inducing the condition known as pyorrhœa alveolaris. From personal observation I am convinced of the correctness of this view. There is also little doubt in my mind as to the probability of syphilis itself being the cause in some cases. Although not familiar with dental literature upon this subject, I have found in conversation with several members of the dental profession, that cases occasionally occur which are attributed to syphilis. It is obvious that in these cases, constitutional treatment is of the greatest importance, and is the only method of accomplishing that basic principle of all treatment —removal of the cause.

Although the ordinary erosions, mucous patches,

and ulcerations of the oral cavity occurring during the secondary period, are annoying, they are rarely destructive. This cannot be said of the late secondary and tertiary lesions. A characteristic feature of late syphilis is a tendency to the deposit of so-called gummy material or syphiloma in various situations. This consists essentially of an accumulation of cells of a low grade, which obstruct the tissues, and impair their vitality.

This deposit has a special predilection for the osseous tissues and periosteum, and often affects the jaws and hard palate, with or without involvement of the nasal bones. Its results are inflammation, caries, or necrosis. In the diagnosis we rely upon the history somewhat, but there is usually no difficulty in passing an opinion upon the physical appearances alone. If seen early, a gummy tumor may be detected. It is a hard inelastic swelling over the bone. It is not especially tender, and is not much discolored, as a rule, although it may be of a bluish tint. It is not very painful, except at night, when the pain is apt to be severe. Taken all in all, the morbid process is a passive one. Later on, the gumma softens at its centre, and the skin becomes thinned and discolored. Ulceration may occur, or under treatment the softened material may resolve. If the tumor absorbs, a depression remains in the surface of the bone. If ulceration occurs, the probe will usually strike bare and roughened bone at the bottom of the cavity. When small bones, such as the vomer and palate, are involved, nutrition is so impaired that necrosis occurs in many cases. In such cases the bone is apt to come away entire and preserve its natural form. Nothing but syphilis will thus dissect out a bone. The resulting deformity in these cases is very marked, and should the palate be involved, speech is so impaired that the aid of the dentist is necessary. With an obturator, these cases of acquired cleft palate may be made quite comfortable. Operation is rarely productive of great benefit, on account of the low vitality of the tissues in long-standing cases of syphilis.

It is probable that, with the exception of phosphorus necrosis, traumatic necrosis, and cases undoubtedly due to diseased conditions of the teeth, the majority of cases of necrosis of the jaws, nose and palate are due to syphilis, more or less remote. The dental engine has done excellent service in these cases. In the hands of Dr. Goodwillie, especially, it has done good work. It has been shown that by early operation the necrosis may be limited and recovery hastened.

I have already encroached upon the time of the Section to a considerable extent, yet I have not been able to do more than outline in a general way the more important points of my subject. I am well aware that the ground has not been thoroughly covered, but if points in the individual experiences of the members have been recalled to mind, the object of this paper will have been accomplished.

125 State St., Chicago.

MEDICAL PROGRESS.

Scarlet Fever from Cows Milk.—At a meeting of the Epidemiological Society, on April 14, Dr. James Cameron read a paper entitled, "Observations on a certain Malady occurring among Cows at a time when the Milk produced by them disseminated Scarlet Fever," of which the following is an abstract. The author began by stating that he proposed to lay before the Society a short description of a cow disease which had been the subject of investigation by Mr. W. H. Power, Dr. Klein, and himself during a recent inquiry into an outbreak of scarlet fever which occurred in certain districts in London and in Hendon amongst consumers of milk derived from a dairy farm situated within his sanitary district. It was not his intention to discuss the circumstantial evidence which led to the discovery of this disease amongst the cows, or which proved its connection with the milk. These were respectively in the hands of Mr. Power and Dr. Klein. The disease is certainly not a new one; it has been known to some farmers and cowkeepers, at any rate, as a catching malady under the designation of sore teats, blistered teats, and the like; but it has never hitherto been recognized or described as a specific contagious disease amongst cows, or considered to have any concern with the causation of scarlet fever in the human subject, and has commonly been regarded as a malady of little importance. After giving an account of the farm, and speaking favorably of its sanitary condition, the author stated that the disease first appeared in some newly purchased cows, which had arrived about a fortnight before the first cases of scarlet fever occurred among consumers of the milk. It was subsequently ascertained that one of these cows, which was the first sufferer, introduced the disease into the herd, the malady spreading from shed to shed until the whole herd of 100 cows, with very few exceptions, was attacked; while, coincidently with the spread of the disease among the cows and into the various sheds, scarlet fever made its appearance, and continued to prevail among the consumers of the milk procured from these sheds. Dr. Cameron described the disease generally as a specific contagious disease, occurring usually in the first instance amongst newly calved cows, and capable of being communicated to healthy cows by direct inoculation of the teats with virus conveyed by the hands of the cowman. The disease may continue from four to six weeks, and is characterized by general constitutional disturbance, a short initiatory fever, a dry hacking cough, sometimes quickened breathing, sore throat in severe cases, discharges from the nostrils and eyes, an eruption on the skin round the eyes and hind quarters, vesicles on the teats and udder, alteration in the quality of the milk secretion, and well-marked visceral lesions. The author then proceded to discuss the symptoms in detail, and referring to the eruption on the teats and udder, stated that from five to seven days after the commencement of the illness one or more teats became much swollen, and vesicles or bullæ shortly make their appearance upon them. These vesicles are usually rubbed and

broken in milking, leaving sores with raised ulcerated looking edges; at this period the disease appears to be easily conveyed to other cows. Shortly after the vesicle has been broken a brown scab forms upon the sore, and this may remain from ten days or a fortnight to five or six weeks, a thin discharge escaping from beneath it until the sore is healed. There is a tendency for the milk to become ropy during the illness, but this is not always present, and as a rule this condition is not apparent until the milk has stood for five or six hours; hence the milk from this farm was distributed before this peculiarity had had time to show itself. After describing the difference between cow-pox and the disease in question, Dr. Cameron urged the necessity for examination of cows and for the removal of all suspected animals from the milk business, and he expressed the hope that the Government would see fit before long to institute some means of more effectually protecting the general public against the recurrence of these disastrous outbreaks of disease which are due to milk.—*Lancet*, May 15, 1886.

DELIRIUM TREMENS CAUSED BY CHEWING TEA.—DR. W. B. SLAYTER, of Halifax, N. S., relates a peculiar and interesting case of this nature. A girl complained of sleeplesness, nervousness, and repeated twitchings of the muscles of the face and extremities, which would continue for several minutes at a time. These symptoms had been present for several months previously. Her mistress informed me that the girl had been acting strangely for several days. She was wandering in her mind at times, and imagined people and evil spirits were about her seeking to do her harm. She had not slept for several nights, and on one or two occasions had been found at night wandering about the house. Pulse 96 and small; tongue dry and brown; eyes suffused; irregular action of the heart-weight at præcordia; sallow complexion. A dose of bromide of potassium and hydrate of chloral gave her a good rest for the night, and next morning she was sent home to her mother.

At 4:30 A.M. three days later I was again summoned to see her. Some men had found her walking about one of the wharves of our city, in the neighborhood of her mother's house. They tried to persuade her to go home, but she broke away from them and endeavored to jump off the end of the wharf, when she was caught and taken to her home. I found her with a pulse of 110°, a very dry and brown tongue, suffused eyes, no marked increase of temperature, violent delirium, and tremulous hands and arms—in short, the well-marked symptoms of delirium tremens. Her mother informed me that she had complained of a good deal of pain in the abdomen, and on examina tion I found a smooth, quite hard tumor in the right iliac region, half as large again as an ordinary orange. Owing to the violent delirium I was unable to find out whether it was tender to the touch or not. A hypodermic injection of morphia somewhat relieved the nervous symptoms. A brisk cathartic brought away a mass of hardened fæces, followed by a large quantity. of a thickish tarry-looking excreta, which seemed to be made up of tea-leaves in different stages of maceration, quite a large proportion, probably a third, being tea-leaves quite unchanged in appearance or color. Bromide of potassium and chloral in a few days quieted the nerve-centres; good nursing, proper diet, and tonics soon restored the patient to her usual health. After the action of the cathartic I found the abdominal swelling somewhat lessened in size, but it was not until several doses at intervals had been administered that the tumour entirely disappeared. After each dose a quantity of tea-leaves were expelled. In about three weeks the evacuations were normal in appearance, and her general health was fairly restored. The patient informed me than when about 17 years of age she went to one of the New England towns to work in a factory, and there contracted the habit of chewing tea—a habit, quite common amongst the factory girls. She thought she chewed on an average about half a pound of tea daily, and some days more. It made her feel better able to work. Of course, as to quantity her estimate may not be depended on. She had never been addicted to alcoholism, and ascribed her attacks solely to the tea-chewing. She tried to give it up, but felt so nervous and fidgety as to be compelled to return to the old habit. The second attack caused me to copy from my case-book the notes taken at the time. The only points of importance are the *cause* and the *repeated and continuous muscular twitchings*. Of course most physicians have met with many cases of great nervousness and fidgetiness occasioned by excessive tea-drinking, but I cannot find any record in any of the works on medicine or materia medica within my reach of such severe symptoms being induced by tea-chewing. Ringer tells us that "the Physiological Committee presided over by the late Dr. Hughes Bennett concluded that the *motor nerves are unaffected*." The long continued repeated muscular twitchings would seem to contradict this portion of the Committee's report.—*Lancet*, April 24, 1886.

KRULL'S METHOD OF TREATING CATARRHAL JAUNDICE.—M. R. LONGUET gives an account of this treatment and of Löwenthal's confirmation of its efficacy. It seems that Krull published an account of his method in 1877, but that it excited little attention until Löwenthal took it up. It consists simply in the administration of enemata of cold water; the first injection, of one or two quarts, at a temperature of 59° F., is thrown in gently and retained as long as possible; on the succeeding days an enema is given every morning, the temperature being gradually increased to 71.6° F., which is not exceeded. The cure is generally accomplished by the fourth day, and in no instance have more than seven injections been found necessary. No failures are mentioned, although several of the cases were of long standing and had resisted the most varied treatment, including the use of that *ultima ratio* of the Germans, Carlsbad water. No medicine is allowed to be taken, and the diet is restricted to vegetables. Löwenthal, who used injections somewhat colder than those mentioned, tried the method in forty-one cases, and he absolutely confirms Krull's report of its efficiency.—*New York Medical Journal*, May 1, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JUNE 12, 1886.

THE BLOOD-PLAQUE AND COAGULATION.

The two most notable papers that have appeared for some time on the physiology of the blood are the "Cartwright Lectures," by PROFESSOR WILLIAM OSLER, on "Certain Problems in the Physiology of the Blood-corpuscles," and a paper by MR. GEO. T. KEMP, Fellow of Johns Hopkins University, "On the so-called 'New Element' of the Blood and its Relation to Coagulation," published in *Studies from the Biological Laboratory*, Vol. III, No. 6. Dr. Osler's first lecture deals exclusively with the blood-plaque, while in his third he treats of the relation of the corpuscles to coagulation.

As is well known, the blood-plaques have been variously designated as elementary corpuscles, globulins, granular *débris* or Schultze's granular masses, hæmatoblasts, and Bluttplättchen (by Bizzozero). In preference to the literal translation of Bizzozero's term, blood-plate, both Osler and Kemp have adopted the term blood-plaque as being more euphonious. Various writers have referred to this element as the "third corpuscle," but the objections to this term are so grave that it has been practically abandoned. The plaques may be described as minute elements circulating in the blood plasma with the other corpuscles, and possessing such specific and distinct characteristics that they must be numbered among the normal histological constituents of the blood. Dr. Osler gives their size as from one-sixth to one-half that of a red corpuscle, which is sufficiently accurate for elements showing such variations in size. Sometimes, however, a plaque may be found which measures as much as 5 mm. It is a circular disc, with a smooth, well-defined margin, and occasionally some are found which show a bilateral depression. "It is a homogeneous, smooth, structureless protoplasm, of a light grey color, and in the unaltered state no nucleus can be found." As to whether a nucleus is found after staining there is considerable dispute. After the blood has been withdrawn from the vessels two peculiarities of the plaques occasion a serious hindrance to their recognition as special elements of the blood: the rapidity with which the protoplasms alter, and their tendency to adhere to one another and to substances with which they come in contact. So long as they are kept in the vessels they do not seem to change more rapidly than the corpuscles, as Osler has found them unaltered in the pial vessels of man some hours after death; and well-preserved plaques may be found enclosed in fibrin taken from the body some time after death.

What is the origin of the plaque? More than half a dozen answers have been given to this question, and experimental evidence has been adduced in support of each answer. So long as the red and white corpuscles were the only recognized histological elements of the blood it was most natural for any observer to connect the plaques and masses with one of these elements. They have been variously regarded as hæmatoblasts, or young red corpuscles; as derived from the red corpuscles; as derived from the white corpuscles; as nuclei floating free in the blood; as fibrin; and finally as independent elements. It seems scarcely worth the while to mention the evidence upon which these views have been founded. Suffice it to say that the views are carefully examined by Kemp, and sufficient evidence brought against them (save those which claim that they are hæmatoblasts or independent elements) to render them most improbable. That they are not due to changes produced in other elements after the blood is drawn is shown by pricking the finger through a drop of osmic acid, by which process all the elements of the blood are immediately set when they leave the vessel. Furthermore, we could scarcely ask for more conclusive proof than that five competent observers—Bizzozero, Lavdovsky, Hlava, Schimmelbusch and Osler—have seen them circulating in the vessels of the mesentery, and in the uninjured vessels of the connective tissue of young rats. Kemp's opinion is that there is no doubt that the plaques exist in the blood, and we have not yet sufficient evidence to believe them to be other than an independent morphological element—a view which is held by Max Schultze, Osler, Bizozzero, Laker, Lavdovsky, Halla and Schimmelbusch.

Careful and painstaking enumerations as to the presence of the plaques in the various acute and

chronic diseases have not been made, but Osler draws the following conclusions from numerous observations: 1. The plaques are increased in all chronic wasting diseases—cachexiæ—with or without fever; debilitated persons, the subjects of phthisis, cancer or other chronic wasting diseases present a marked increase. In phthisis the ratio of the plaques to the red corpuscles may be as high as 1 to 5. 2. In acute sthenic fevers they are not increased in the early stages. As the disease advances, however, and the patient becomes weaker and more debilitated the increase is marked as a rule. This is especially well seen in typhoid fever, in which during the first week the number of plaques may not rise above normal, while in the third and fourth weeks there is usually a large increase. 3. In the so-called blood diseases the number of the plaques is variable. For example, many observers have noticed large numbers in certain cases of leukæmia, but in other cases the increase is not apparent; and the same is true of lymphatic anæmia. In some cases of Hodgkin's disease Dr. Osler has seen the plaques in very large numbers; they may be scanty in profound anæmia; and in cases of pernicious anæmia the clusters of plaques may be almost absent, or much more scanty than in health.

It must be acknowledged that the theory of Hayem, that the plaques are hæmatoblasts, is strongly supported. He believes that the red discs are nucleated, and in an article in the *Archives de Physiologie* three years ago he asserted with confidence that the plaques are nucleated. If, as Hayem asserts, the plaques are biconcova, this is another point of resemblance. Laker agrees with Hayem on this point, but Bizzozero and Schimmelbush assert that they only become biconcova when drawn into a salt solution or Hayem's fluid. Kemp, however, asserts that in addition to seeing them on edge and making out their characteristic dumb-bell shape, he has succeeded several times in seeing them roll over and over in a very slow current, so that at least in *osmic acid* and Hayem's solution he was able to convince himself beyond all question of their biconcavity. The biconcavity is also shown in a photograph made from a specimen stained with Bismarck brown. Afanasef regards Hayem's "nucleus" as only a precipitation of granules in the centre of the plaque, and Schimmelbusch takes a similar ground. Kemp has failed to see anything which he regards as a nucleus, and thinks that the concavity seen when examining full on the surface may be very probably mistaken for a nucleus. As in the case of the red corpuscles, the question of a cell-membrane may be raised in regard to the plaques.

Still another point of resemblance between the red corpuscles and plaques is that, under certain circumstances the latter will shrivel and become crenate; and Kemp says that it is quite a usual thing to see both plaques and red corpuscles caught at one end and drawn out by a current so as to present a long, pear-shaped or even threadlike appearance. According to Hayem, again, the plaques contain hæmoglobin; a view which is supported by Mayet and Laptschinsky, the latter having described corpuscles about one-third the size of the red corpuscles, which are sometimes more strongly colored than usual, and sometimes colorless. Riess, Bizzozero, Laker, Hlava, Halla and Schimmelbusch take the view that the plaques are without color, and Kemp has tried in vain to find hæmoglobin in them, even with the double staining fluid of carmine and indigo-carmine, which is claimed to stain green any cell containing hæmoglobin. Another point of relation between the plaques and red corpuscles, pointed out by Hayem, Bizzozero and Lavdovsky, is that in different animals the size of the plaques always varies in the same ratio as that of the red corpuscles. To this point Kemp adds that in trying to get a preparation from which to make a photograph of the plaques, he tried ten different staining fluids on the blood after hardening in osmic acid, and *in every case* the plaques and red discs stained proportionately.

Hayem further supports his hæmatoblast theory by the assertion that in pathological conditions of the system where "new blood" is demanded, we may always find the plaques in increased numbers—which fact had already been stated by Reiss. But there is an objection to this assertion which is so great as almost to necessitate a Scotch verdict. Kemp says: "The sources of error in all numerical determinations of the plaques are very great, on account of the tendency which these elements have to adhere to each other or to any foreign body with which they come in contact. I was early led to see that for this reason numerical determinations, where the blood had to be measured, were practically of little value. The same point has been made by Schimmelbusch, who, in addition to the results of his own observations, has shown that enormous variations exist in the results of the same observer, while different observers have shown diametrically opposite results, in determining the number of plaques in certain pathological conditions. I think the only way to obtain a reliable numerical determination of the plaques would be to prick the skin through a drop of osmic acid, examine a thin layer of this mixture, and count the relative number of plaques and red corpuscles. A separate determination would then have to be made by the

usual methods for the red corpuscles, from which the number of plaques could be calculated. Even this method would not be free from error, for Hayem has shown that enough plaques adhere to the edges of the wound to make an appreciable difference in the extravasated blood. Probably the most suggestive observations in support of the hæmatoblast theory were made by Hayem, who has found the plaques in the vaso-formative cells of the mesentery of newly-born kittens, where the young red blood corpuscles are in process of development, while both Hayem and Pouchet have described intermediate stages between the plaques and the red corpuscles.[1] We cannot regard the hæmatoblast theory as proved, but we must acknowledge that the relationships between the plaques and the red corpuscles are most striking; and it seems as though this is the most plausible explanation offered."

We have now come to the question as to the relation of the plaques to coagulation, which will be discussed in the next issue of THE JOURNAL.

THE AMERICAN MEDICAL ASSOCIATION.

The *Medical Record*, of New York, and a few other journals of less note have been indulging in expressions calculated to create the impression that the recent meeting of the Association was less representative of the whole profession than most of its predecessors; and that the action of its Judicial Council in reference to the admission of the delegates from the Philadelphia County Medical Society had started a serious split in the membership of the Association. To the latter accusation the *Medical and Surgical Reporter*, of Philadelphia, of May 22, replies so directly and truthfully that we quote from it as follows:

"It is hardly fair to speak of a split when only a few fibres are carried away; it would be more correct to say a shave or a scrape. The main body of the American Medical Association is to-day more united than it ever was, and it has lost the allegiance only of those who 'got mad' because they could not control. We cannot help but see that the action of the Judicial Council was eminently proper in the case of the alleged delegation from the Philadelphia County Medical Society. There were two sets of delegates before them; one set had been regularly and legally nominated, but they were not elected; the other set had been elected, but, and this is a big BUT, they had not been legally nominated, and as such nomination is, according to the constitution and by-laws of the Society, a *sine qua non* of a legal election, every unbiased mind must hold that they were not legally elected. Hence, the clear position was that the Philadelphia County Medical Society had no legally accredited delegates, and the Society was not entitled to recognition."

The pretense that the recent meeting at St Louis was in any sense more geographical or less generally representative than in former years is very easily disproved by reference to the facts. Probably no three meetings could be chosen from the whole history of the Association affording a fairer basis for comparison than those held in New York, 1880, Washington, 1884, and St. Louis, 1886. The first was in the great metropolis of the Atlantic States, immediately surrounded by the greatest density of population and the most complete social organization of the profession; the second in the capital of the country, with more local attractions than any other city; and the third in a great city in the central part of the Mississippi Valley. The number of members attending each of these meetings was between 1,000 and 1,200, embracing delegates from almost every State and Territory in the Union.

The six States that furnished the largest number of members in the meeting at New York in 1880, were New York, Pennsylvania, Massachusetts, New Jersey, Michigan and Connecticut; New York alone furnishing 319, or very nearly one-third of the whole number present.

The six States having the highest number of members in the meeting at Washington, 1884, were Pennsylvania, Ohio, New York, Indiana, Illinois, and Iowa; Pennsylvania sending the highest number, it being 219.

The six States having the highest number of members in the meeting in St. Louis in 1886, were Missouri, Illinois, Iowa, Indiana, Pennsylvania, and Ohio; Missouri furnishing 252, or less than one-quarter of the whole number in attendance. The only States not represented in the meeting at St. Louis were New Hampshire in the northeast, Delaware in the middle Atlantic region, Alabama in the south or Gulf region, and Nevada and Oregon in the extreme west. These facts show the entire fallacy of claiming that the recent meeting was less representative of the profession of the whole country than those held at any former period. If such a claim could be made in reference to either of the three meetings we have named, it would be the one held in New York in 1880, where a much larger proportion of members belonged to the State in which the meeting was held, than in either of the others. Again, in 1880 the regular

[1] The observation of Hlava may also be taken in support of Hayem and Pouchet; the colored bodies which he distinguishes from the plaques being plaques containing hæmoglobin, and on the way to form red corpuscles.

paying membership of the Association was less than 2,000, while it is now double that number, and is composed of representatives from the State, County and other local medical societies in every State, aggregating between 30,000 and 40,000 of the most active, enterprising members of the profession of the United States. These facts do not afford much support to the idea that the Association is about to crumble to pieces, or be speedily succeeded by a "Congress of American Specialists" constructed from a union or confederation of half a dozen American specialist organizations whose entire aggregate membership will hardly number five hundred.

MAY INJURIES BE EXHIBITED TO JURIES?

The practice of exhibiting injured or deformed limbs to juries in malpractice suits by a plaintiff, or by the defendant in suits for medical fees for services, has long been regarded as a fruitful source of erroneous verdicts, and an act of manifest unfairness to the physician or surgeon. To allow a jury of twelve, or twelve hundred, uneducated (medically) and unskilled men to say in how far the surgeon is responsible for a given deformity is as manifestly unfair as to allow the same jury to dictate to the attending physician as to what remedies should be used in a case of diabetes or typhoid fever, whether the forceps should be used in a case of shoulder presentation, or whether any, and what, antiseptic agent should be used in a case of ovariotomy.

The case of Carstens *vs.* Hauselman, decided by the Supreme Court of Michigan, on May 12, has some points of interest to surgeons as regards this question. Action was brought by the surgeon for services rendered in the case and treatment of a fracture of the leg. Among other points of defense one was raised of improper treatment. The lower Court gave verdict and judgment for the plaintiff. Error was assigned because the Court below had refused to allow the defendant to exhibit her injured leg to the jury. Upon error the Supreme Court, *per* Campbell, J., used the following language:

"The injury occurred several years before, and there was testimony concerning the correctness of the treatment, which necessarily involved medical questions which no jury could be supposed to fully comprehend. It is not competent to allow juries to determine for themselves whether a physician's course has been proper or improper in the treatment of a fractured limb, and the Court very properly refused to permit them to inspect it for that purpose. No inspection after an injury is healed, apart from some knowledge of the character of the injury and the methods of treatment, could enable even a medical expert to decide upon the merits or demerits of the attending surgeon. A jury's guessing from such an inspection would be of no value whatever, and any needless exposure would have been, as the Court below properly held, improper, if not indecent."

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Eighth Annual Meeting, held in the Hall of the College of Physicians, of Philadelphia, May 27, 28 and 29, 1886.

THE PRESIDENT, DR. HARRISON ALLEN, of Philadelphia, delivered the *Annual Address.*

Following the Presidential address, a letter from the Secretary of the Philadelphia College of Physicians, tendering to the Association the use of the hall and the hospitalities of the college, was read.

DR. HARRISON ALLEN then read a paper entitled

TWO CASES OF ADENOID DISEASE OF THE ROOF OF THE PHARYNX WHICH EXHIBITED UNUSUAL FEATURES.

The result of operations for the removal of adenoid tissue from the pharynx is usually so excellent that the necessity for a repetition of the operation is said to be seldom met with. The following cases were related as presenting certain points of interest:

Case 1.—A. B., age 5 years, much emaciated, without appetite, suffering with frequent attacks of indigestion, was sent to him in the latter part of January, 1884. Examination showed the roof of the mouth to be elevated, but the slightest attempt to depress the tongue was followed by gagging. The nostrils were filled with a mucoid discharge, and a small quantity of a similar discharge was seen in the fauces after gagging. During the day, the respiration was not exceedingly difficult, but at night it was greatly impeded. Almost directly after the child fell asleep, respiration became labored. After three or four inhalations, breathing would cease, the child would open its mouth and make strenuous efforts to inspire. The child would then awaken and a forced inspiration ensue. It would then quickly fall asleep and the same phenomena would recur, and in this manner the entire night would be passed. To these were occasionally added fits of crying and emesis. During an attack of whooping-cough the symptoms became much exaggerated, and were associated with irregular action of the heart.

Hypertrophy of the adenoid tissue of the pharynx with unusual reflex phenomena was diagnosed. On January 29, with the patient under ether, the operation for the removal of this tissue was performed. An attempt was made to break down this tissue with the finger, but the presence of the finger arrested

respiration. Efforts were then made to rasp the growth away with an instrument passed through the nose, but in a short time the patient showed symptoms of depression and the operation was suspended. The pharynx was next seared with the hot wire. During the succeeding five weeks, applications of iodine and glycerine were made, but there was no evident improvement in the breathing at night. The patient was again etherized and the pharynx shown to be empty. Suspecting that the tonsils might be the cause of the difficulty, a portion of each was excised. Still no improvement followed. A third attempt to detect the cause of the difficulty was made, and it was determined positively that the nostrils were patulous. A careful examination showed that during sleep the tongue fell backwards, and that this was the essential condition. It was then directed that when these attacks came on the boy should be held with the face downwards. The moment this position was assumed the child passed into a profound slumber. It was then so arranged that during the entire night the patient should be watched, so that the tongue should not have an opportunity of falling back. This watching has been continued up to the present time. The boy prefers to lie upon his side, but when the attacks come on, turns on his face without awakening. He is now a strong and healthy boy.

Case 2.—A girl 6 years of age. The child was cyanotic at birth. The extremities were cold and of a bluish color, but no difficulty with the heart could be detected. The irritability of the pharynx was excessive. The patient had been twice operated on by other surgeons, and it was inferred that an attempt had been made to remove morbid tissue. The patient was etherized with great care and the entire nasal pharynx found to be much smaller than normal, and its roof was highly arched in form. The posterior slope of the roof was the seat of adenoid growths. Some were removed by the galvano-cautery passed through the nose. Some of the nodules at the lower border of the pharynx were removed with the scissors.

The patient was improved, and two weeks later she was again etherized, and it was ascertained that all the nodules had been removed, but that the membrane at the roof of the mouth was exceedingly thick and tended to obstruct the passage of air. This was subjected to cauterization in several places. No further efforts were made to reduce the size of the membrane by operation, and the patient was treated as a case of perverted nutrition of the osseous system. Iodine and glycerine were applied locally. Under this treatment gradual improvement in the nasal respiration took place, and at the present time the child appeared to be perfectly recovered.

Dr. Franklin H. Hooper, of Boston, had had only one case in which any accident followed the operation for removal of adenoid tissue. This was in the case of a little girl 8 years of age, of a neurotic temperament and very precocious. Nasal respiration had been obstructed and articulation had been defective since the age of 3 years. Hearing was also impaired. A large quantity of adenoid tissue was demonstrated; the removal of this was followed by great improvement in breathing and articulation. The breathing did not improve at once, but the use of the Politzer bag resulted in marked improvement. This had been previously tried without effect. From this time she began to grow nervous. Eight days after the restoration of hearing, she complained that she could not keep still. In a short time the symptoms of chorea developed and gradually increased in intensity. The speech became affected, and for over a month she was unable to speak. The chorea assumed an exceedingly severe form. She was unable to sleep. Various remedies were tried without benefit. Finally urethran was suggested. The use of this drug was followed by quiet sleep. Since this time the child has continued to improve and the chorea has now entirely disappeared.

Dr. E. L. Shurly, of Detroit: Where the galvano-cautery is used, it has been said that there is considerable danger of the ether taking fire when this is used as the anæsthetic. He always uses chloroform under such circumstances.

Dr. S. W. Langmaid, of Detroit: In one case coming under his observation there was a period of thirty-five seconds between the respirations. In that case, the difficulty was relieved by the patient getting on his hands and knees. There must have been either a falling back of the tongue or some inhibitory action of the respiratory centre. The removal of the growth did away with the interruption of respiration. He was not aware that much has been said in regard to this interruption of respiration.

Dr. Carl Seiler, of Philadelphia: One point with reference to adenoid growths in the roof of the pharynx is the effect upon singing voice. Dr. Bosworth, of New York, called his attention to the fact that different lines might be drawn on the roof of the pharynx corresponding to different notes of the scale. A swelling in a particular situation will interfere with the production of a certain note. A case illustrating this was seen by him a short time ago. A young lady could not reach the upper notes of the scale. He found a small adenoid growth which he removed with his finger. She is now able to reach every note with the greatest ease.

Dr. Harrison Allen said that Dr. Hooper's case is an evidence of the way in which the adenoid growths may affect the entire system. His case is noteworthy in view of the fact that the phenomena appeared after the removal of the growth. With regard to the use of ether, he has not been unaware of the danger, but by fanning the patient for a moment before using the cautery the vapor of the ether is removed, and he has experienced no difficulty. He has been unable to find on record a case similar to the first one narrated. Dr. Langmaid's case agrees with it in that the difficulty was relieved by change of position. In a case similar to the one related by Dr. Seiler, he removed a small mass of adenoid tissue, and although the patient was able to reach the higher notes, she complained of the sensation of a large cavity in the situation from which the mass was removed.

Dr. J. Solis Cohen then presented for Professor

RAMON DE LA SOTA Y LASTRA, of Seville, Spain, a paper on

LUPUS OF THE THROAT.

The author referred to the difficulty of diagnosis which was experienced in many of these cases, and in illustration related the following: In 1884, he was consulted by a physician on account of an affection of the throat. The patient was much emaciated, reduced in strength and with a clay-colored complexion. He was 60 years of age. The trouble with the throat had commenced one year previously. He was unable to take anything but milk and broth. The throat was covered with psoriatic scales. The pharynx was lumpy and of a wine red color. The right tonsil was the seat of an ulceration extending from the pyriform fossa below to the middle of the uvula and involving half that structure. Its borders were red and swollen, its surface lumpy and irregular, and of a hard and elastic consistence. Some pain was produced by palpation, but no bleeding. There was no trouble while talking or on coughing. Liquids were swallowed without difficulty. Breathing was accomplished with perfect freedom. The submaxillary glands were swollen. The patient had suffered from rheumatism, but no history of syphilis could be obtained. Taking into consideration the history of the case and the age of the patient, he considered it an ulcerated epithelioma. This was concurred in by the patient's physicians; nevertheless, mistrusting the testimony obtained, antisyphilitic medication with mercurials was tried. This occasioned such bad results that it was necessary to suspend it. He was then placed upon the use of iron and bitter tonics and such diet as he could take. The specific treatment was subsequently resumed, but the local lesion assumed such a bad aspect that it became necessary to give up the treatment. From the fact that the ulceration was unattended by pain he began to have some doubts of its epitheliomatous nature. He next prescribed sodium argenite in ascending doses, with a gargle of resorcin and the use of iodoform on the ulcerated surface after it was washed with a solution of borax. For a month the ulceration continued to extend, and when he had lost all hope, it stopped its progress and became covered with healthy granulations. Cicatrization went on and was complete in three months. The scar is irregular, elevated and depressed, hard and soft, the posterior portion being adherent to the pharyngeal wall. The lingual psoriasis continued. Restoration to health has taken place. It is now eighteen months since the ulcer healed. With this result, he concluded that the case was one of lupus.

His experience with this and other cases of lupus of the throat has led him to conclude that the disease may make its appearance at any period of life. He has seen it more frequently in adults than in children, and more frequently in men than in women. He has been unable to obtain any information in regard to inheritance. He has not found that hard drinkers or smokers were more liable to suffer, nor has he found that great exertion of the voice or exposure to irritating substances, the application of the cautery or other agents, had any influence in its production.

He has never had an opportunity of observing the initial manifestations of the disease, but he has been able to detect the involvement of sound tissues later in the disease. Sometimes the mucous membrane assumes a purple color, and swells up and becomes granulated. Then one or two nodules may develop and may attain the size of a pea. Sometimes they become prominent without any alteration in the appearance of the mucous membrane. They may remain superficial, or they may attack the mucous tissue and also the submucous tissue. Their form is rounded and their surface is smooth. These nodules are distinguished by their rosy red color from leprous tumors. Unlike carcinoma, the tumors are usually quite distinct. On pressure they present an elastic resistance. This is greater than the hardness of inflammation, but less than that of epithelioma. The parts on which the tumor develops become rigid and the natural movement is diminished or lost. Contrary to carcinoma, which usually produces sharp lancinating pain, and to leprosy, which is generally accompanied with anæsthesia, there is in lupus no alteration of the sensitiveness of the part. After a shorter or longer period, the tubercle softens and becomes ulcerated. The ulceration assumes two forms: In some cases the tumor becomes excavated to a considerable depth, while in others it is more superficial. These ulcers do not bleed on pressure. The cure is difficult and attended with the formation of scabs. In some cases, these ulcers develop in a slow way, while in others they start with astonishing rapidity. They may develop within a few days, or they may remain quiescent for months or years and then take on destructive action. The healing of the ulcer is followed by the formation of irregular scars, raised in some places, depressed in others, red in the former, white in the latter. Adhesions to different parts take place. Cicatrization takes place slowly and is easily destroyed. Infiltration always remains.

All agree that the cure of lupus of the throat is more difficult than the same process in the skin. In the cases which he has seen, the same treatment which he has employed in external lupus he has found of service in lupus of the throat. He does not despise internal treatment, but uses such remedies as are indicated by the general condition of the patient. This has an important influence upon the result of topical treatment. If the lupus is not ulcerated he applies caustic substances. Until a few months ago he used tincture of iodine. He has, however, found good effects from the use of lactic acid. He has used it in cases of lupus of the cheek and gums, and also of the larynx. He has met with no inconvenience from its use except the pain, which varies in different cases. If the lupus is ulcerated, he sometimes uses the lactic acid; more frequently he employs a wash of borax and covers the ulcer with powder of iodoform. He always prescribes a gargle of a 1 per cent. solution of resorcin. Patients thus treated have always recovered after a greater or less time. In some cases the cure has probably been realized in the natural course of the disease rather than as a result of the therapeutic measures.

Dr. Joseph Leidy, of Philadelphia, on invitation, gave

SOME POINTS CONNECTED WITH THE LARYNX AND ITS INTRINSIC MUSCLES.

The aperture of the larynx which communicates with the pharynx is a large oblique opening, bounded above by the summit of the epiglottis and laterally by the aryteno-epiglottidean folds. The lower portion is formed by the notch of the arytenoid cartilages. Laterally on each side, two eminences are quite prominent in the fresh larynx, an upper pair and a lower pair. The lower pair is produced by the carniculæ of the larynx which terminate the summits of the arytenoid cartilages. The text-books state that immediately above these there is another pair of cartilages. These are the cartilages of Wrisberg. The writer has rarely found these cartilages decidedly developed in the white subject. Where a prominence exists in the white subject, it is caused by a group of glands. Often in these a little cartilage may be found. In the negro, the cartilages of Wrisberg are conspicuously developed. This point has also been referred to by European writers.

The next point refers to the vocal cords, as they are usually designated. Between these cords is the fissure of the glottis. While physiologically it is correct to speak of the vocal cords, yet anatomically it is not correct to speak of vocal cords. These bands are usually spoken of as the inferior thyro-arytenoid ligaments. There is another ligament extending between the thyroid and cricoid cartilage in front and extending back to the base of the arytenoid cartilages. This is the middle crico-thyroid ligament, and is connected with the upper border of the vocal membranes. This connection is very important. If the cricoid cartilage is broken or crushed, it must influence the action of the so-called vocal cords, for the vocal membranes are connected quite as much at the lower border to the cricoid cartilage as they are at the upper border to the thyroid cartilage.

The vocal cords are influenced altogether by the muscles attached to the arytenoid cartilages. These are supplied by the inferior laryngeal nerve. Another muscle which may influence the movements of the vocal membranes is the crico-thyroid. This is supplied by a separate nerve, the superior laryngeal. Why this muscle should be supplied by a different nerve has not been satisfactorily explained. The muscles which operate the arytenoid cartilage are the posterior crico-arytenoid, the lateral crico-arytenoid and the arytenoid muscle. These muscles are sufficient to produce all the movements of the vocal membranes. Other muscles, that is to say the aryteno-epiglottidean and the thyro-epiglottidean muscles, have been described, but in his experience, the development of these muscles is exceedingly uncertain.

Another point is in regard to the connection of the muscles. In looking at the origin of muscles we usually consider that they are attached to the surface over which they lie; for instance, we look upon the crico-thyroid as arising from the posterior lateral surface of the arytenoid cartilage. If the muscle is cut across, we find that it arises only at the most remote portion of this surface. Between this and its insertion there is a smooth surface.

Dr. J. Solis Cohen had noticed that the cuneiform cartilages are best developed in those who have the best control over their voices. He had regarded them as supports for the ventricular bands. The connection of the crico-thyroid membrane with the vocal cords is very interesting. There are two supposed paralyses of the larynx which present exactly the same picture. One is the paralysis of the thyro-arytenoid muscle, giving the Indian-bow paralysis of the Germans. The other is paralysis of the crico-thyroid muscle, giving exactly the same appearance. The way to distinguish these paralyses is by placing the finger on the crico-thyroid membrane. If the membrane vibrates when the patient speaks, the crico-thyroid muscle is not paralyzed. With reference to the action of the crico-thyroid muscle in phonation, the thyroid cartilage is fixed, and when the attempt to sound high notes is made the cricoid cartilage is drawn up by this muscle. The posterior crico-thyroid muscle, from its attachment, not only separates the vocal bands, but when they are made tense by other muscles, its action is to increase their tension.

Dr. Joseph Leidy had never been able to see that the crico-thyroid muscle was related to the other muscles in the production of sound. He was glad to hear the explanation which had been given, which appeared to be a satisfactory one.

Dr. J. H. Mackenzie, of Baltimore, exhibited

AN INSTRUMENT FOR FRACTURING THE NASAL SEPTUM,

the chief difference from other instruments of the same class being the great leverage which was obtained.

Dr. Carl Seiler exhibited

AN APPARATUS FOR MAKING SECTIONS OF FROZEN HEADS.

Sections made with the machine were exhibited.

Dr. C. E. Sajous, of Philadelphia, presented

A GALVANO-CAUTERY HANDLE,

in which the wires were attached in the middle of the instrument, and both the wires and the electrodes were secured without the use of screws. The connections within the handle were made of copper and heavier than usual, in order to diminish the resistance.

The President announced the following as the *Nominating Committee:* Dr. T. R. French, of Brooklyn, Dr. F. I. Knight, of Boston, and Dr. G. W. Major, of Montreal.

Afternoon Session.

Dr. F. H. Hooper, of Boston, read a paper concerning

THE POSITIONS OF PARALYZED VOCAL BANDS.

The paper was in part based on experimental work done in the physiological laboratory of the Harvard Medical School, and in part theoretical. Specimens and drawings illustrating certain points were shown. The reader stated that it was his purpose to inquire into certain influences which might combine to de-

termine the position of paralyzed vocal bands, and to ask whether we are always justified in assuming that a given position of immobile vocal band was indicative of the arrested function of this or that muscle of the intrinsic laryngeal groups. The speaker thought that a vocal band might assume different positions in cases of complete paralysis of the recurrent nerve, and he passed in review certain anatomical factors and physical causes which he thought might contribute towards producing the position which might happen to be present when seen reflected in the laryngeal mirror.

Dr. Hooper concluded by saying that in his judgment the larynx is such a complicated organ anatomically, it is subject to such changes at different stages of life, its shape is so different in different individuals, its nerve supply is so great, the arrangement of its muscles so liable to anomalies, that as surely as one attempts to formulate theories on the positions alone of paralyzed vocal bands—positions which may be controlled by intrinsic muscles of the larynx that are not paralyzed, as well as by those that are—just so surely will one be led unconsciously into erroneous mental inferences.

DR. J. SOLIS COHEN read a paper which related the further

HISTORY OF A CASE OF PARALYSIS OF THE POSTERIOR CRICO-ARYTENOID MUSCLES,

presented at the first meeting of the Association in 1879, with a report of the autopsy and the exhibition of a specimen.

The history of the case was briefly given as follows: A man aged 48 years was brought to him with a history that for two years he had suffered from occasional spasm of the larynx so that, on at least two occasions, he had fallen unconscious in the street. When a boy he had suppurative inflammation of the left ear, and ever since then the introduction of the finger into the ear would produce spasm of the glottis. On examination with a mirror, the doctor found what he then considered to be the picture of paralysis of the left posterior crico-arytenoid muscle. The examination produced spasm on the other side. The patient was directed to carry with him nitrite of amyle to be used when the attacks came on. This he did for awhile with good results. He subsequently returned with the statement that the day before he had a severe spasm from tickling in the ear. While illustrating this he had a violent attack in the office, requiring the use of chloroform to relieve it. The next day tracheotomy was performed. No other lesion was found at that time. The spasms were still produced by irritation of the ear. Five or six weeks later, he began to have paralysis of the right vocal band. The picture then became extreme, and after this time he never saw the larynx in any other position. The man gradually became blind, and developed other symptoms of locomotor ataxia. During the four years preceding his death Dr. Cohen did not see him, but during this time he continued to wear the tube. He was able to speak well without occluding the tube. With the condition of conductor paralysis, the doctor thought there was a condition of spasm of the adductors.

At the autopsy the left recurrent nerve seemed natural, although it will be remembered that the left cord was the first affected. The right recurrent showed a distinct line of demarcation between the healthy and unhealthy fibres. Instead of the right muscle being atrophied, it was the left muscle which had undergone wasting.

DR. FRANK DONALDSON, JR., of Baltimore, read a paper on

THE FUNCTIONS OF THE RECURRENT LARYNGEAL NERVE, FROM AN EXPERIMENTAL STUDY IN THE JOHNS HOPKINS UNIVERSITY.

Reference was made to the fact that all the muscles, with the exception of the crico-thyroid, are supplied by the recurrent laryngeal nerve. The nerve, therefore, contains fibres controlling both phonation and respiration, acting both upon the abductor and upon the adductor muscles. He then referred to the experiments performed by Dr. Hooper, of Boston, the results of which had been presented at the last meeting of the Association. Dr. Hooper had found that the constrictors cease to act when consciousness was suspended by the action of ether, and that abduction with dilatation of glottis was obtained by stimulating the recurrent laryngeal nerve when consciousness was suspended. Dr. Donaldson's experiments were made to test the correctness of these results. In five experiments under states of deep narcosis, slight narcosis and almost complete consciousness, he invariably got adduction of the vocal bands under the application of stimuli with the induction coil at ten. In one case in which consciousness had been suspended, under slight stimulation, abduction was produced; while under strong stimulation, adduction was obtained. It was then found that abduction was always produced when weak currents were employed, but adduction was obtained when stronger stimuli were used. He therefore concluded that the constrictors did not cease to act during profound narcosis or in suspensions of consciousness from any cause, and that abduction is not always obtained when consciousness is suspended. It is with weak currents that abduction is produced, but as the stimulation is increased adduction takes place.

DR. F. I. KNIGHT, of Boston, said we must bear in mind that these experiments have been performed upon lower animals, and not upon man, and even if a certain unanimity of opinion is reached, we shall have to adapt these results to the case of man by clinical and pathological observation. It does not follow that the same mechanism takes place in the opening and closure of the glottis in man as in the lower animals. In regard to the abductor paralysis, he thought the whole question should be decided upon the position of the vocal process without any reference to the cord. If the vocal process is found in the median line, it is fair to assume that for some reason the function of the abductor muscle has been abolished. A good deal of difficulty has been experienced by observers in determining when the vocal process is in the median line. To him the crucial test is by phonation. If you get a vertical glottis

on phonation, without any movement on suspected cord, you have a sure case.

Dr. S. Solis Cohen, of Philadelphia, said it was important to distinguish between the automatic (respiration), the reflex (cough), and the psychic (phonation) functions of the larynx. A well known physiological law is that the resistance which a nerve offers to the transmission of nervous force is inversely as the use made of the muscle which it ennervates. No muscle is used more than the abductors of the larynx. The resistance of their nerves would *a priori*, then, be supposed to be the least, and Dr. Donaldson's experiments show that they respond to a weak stimulus. The phonatory muscles are not so frequently used, the resistance of their nerves, though low, is higher than that of the respiratory fibres. The respiratory impulses traverse the nerve continuously, and additional stimulation, whether reflex (irritation of the superior laryngeal), producing cough, or psychic, for purposes of phonation, produces adduction of the vocal bands. There is a local centre in the medulla, the vago-accessorius, nucleus for all the laryngeal muscles. Moderate stimulus from the respiratory centres opens the glottis for respiration, increased stimulus opens it farther, a greater increase, say by reflex irritation, closes it for cough. An impulse from the cerebral cortex, the centre of voluntary motion, closes it for speech.

(*To be concluded.*)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Special Meeting, April 15, 1886.

The President, B. F. Baer, M.D., in the Chair.

W. H. H. Githens, Secretary.

(*Continued from page 642.*)

Dr. H. A. Kelly exhibited the

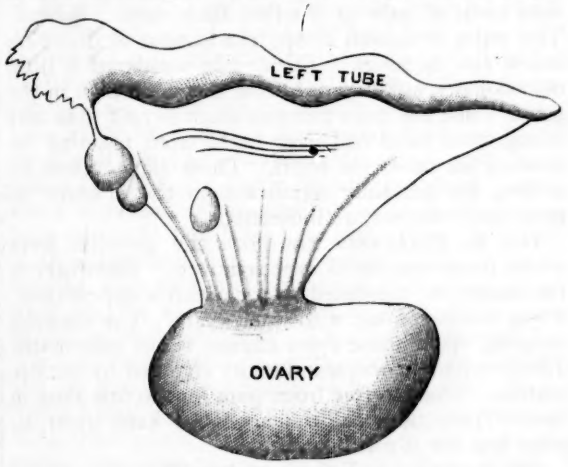
OVARIES AND TUBES FROM A CASE OF CHRONIC OVARITIS, SALPINGITIS AND PELVIC PERITONITIS.

Also, the right ovary and tube from a case of

CELLULITIC CONTRACTION OF RIGHT BROAD LIGAMENT WITH DISAPPEARANCE OF THE MESO-SALPINX AND COHERENCE OF OVARY AND TUBE.

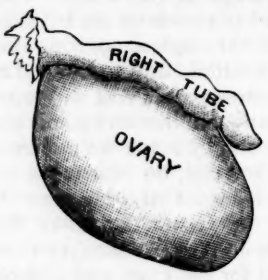
of which the following is the history: H. P., married, age 32, four-parous, has always been irregular in her menstrual function, the flow generally appearing from ten days to two weeks later than expected, and being scant. Her last confinement was eleven months ago. Labor was slow, but no instruments were used. The child died in two months. Ten days after delivery she had an attack of "typhoid fever," *(sic)* and since then she has never been well. During the fever, which lasted many weeks, she had constant severe pain in the right ovarian region, and had repeated chills and flushes of heat. She has at present severe pain in the right ovarian region, and constant headache; is unable to work or exert herself in any way. She has not now menstruated for two months, although regular before. She has a leucorrhœa, which is intermittent in character. Bimanual examination reveals an enlargement on the right side extending from the middle of the hypogastrium two and a half inches to the right, downwards to the pubis and upwards almost half way to the umbilicus. It is most prominent above, very tender and semi-fluctuant; every movement of the mass carries the cervix with it. The cervix points to the left and the right fornix is very shallow. The mass has no firm attachment to the pelvis but is easily movable. It seems to spring from the right cornu-uteri. February: Pain and sensitiveness great. The right fornix obliterated and the uterus drawn bodily to the right side by a shrinkage in the mass. There is a mass which is as hard as a bone on the left side, like a finger, high up behind the vagina, pointing down in its axis. March: After faithful and prolonged treatment consisting for the most part of rest with counter-irritation in the vagina and on the abdomen, and hot douche and glycerine plug, I made an explorating incision, at my private hospital, on March 27, in the presence of Drs. R. P. Harris, Chas. Herman Thomas, P. G. Clark, Marie B. Werner, Boyle of Kansas, Bull of Missouri, Baldy and I. W. Mecaskey to whose courtesy I was indebted for the case, and assisted by Dr. Jas. Hoffman. The right cornu-uteri was found elevated and matted with a mass of mesentery in which it was completely encapsulated. This was slowly detached layer by layer, and the vermiform appendix separated for an extent of two inches. The tip of the appendix gave rise to troublesome bleeding finally checked by the cautery. An enlarged ovary with a withered tube intimately adherent to its periphery was then raised with great difficulty; a black walled cyst, about one and a half centimetres in diameter, burst and a quantity of grumous matter escaped into the peritoneum. The ovary and tube were removed with great difficulty and a part of the hilum was left in the grasp of the ligature. This was carefully burned.

The illustration gives a correct indication of the structural changes in the right ovary, tube and liga-



ment. The left ovary and tube, which were free and sound, I also removed as I was anxious to stop all determination of blood to the uterus. The figure shows well the contrast between the two. The operation was protracted, lasting one and three-quarter

hours. The patient died on the seventh day of one of those remarkable insidious attacks of peritonitis. She appeared to be doing well until the seventh day, when I found her with a wild frightened look and a pulse of 200. She had no pain at all. I broke up the adhesions in the lower part of the wound, which looked well, but I could not reach anything within the wound, and she died within two hours. Dr. R. P. Harris was present at the autopsy a few hours later. The recti had a deep-red unhealthy appearance, and a few spots of pus lay in the floor of the wound, opened down to the peritoneum. The peri-



toneum was firmly glued together and my effort in the morning had not penetrated it, for as soon as the adhesions loosened a large quantity, at least a pint, of brown pus rushed out, and I found the whole posterior part of the pelvis shut off from the general peritoneum by firm agglutination of the viscera above and full of the same material. My chief anxiety was to find the vermiform appendix and see if I could blame it for any share in the result. It was found with difficulty and was covered with a thick finger of lymph. The sepsis came from the matter which escaped from the ovary. I say this for I have never yet seen sepsis in any clean case. Then in looking back for unnoticed symptoms for future guidance in such cases, several points deserved closer attention than they received. *First:* She complained more than usual of pain in the first three days. *Second:* The pulse remained about 112 instead of dropping below 100, as usual. *Third:* She wandered a little occasionally, insisting once that she saw a man in the room. She was more nervous about herself than any of my other cases had ever been, often insisting on sending for me in the night. These signs, taken together, are certainly significant in the absence of pulse and temperature indications.

DR. R. P. HARRIS saw both the patients from whom these specimens were removed. The ovary in the latter case presented a very peculiar appearance; it was cartilagenous, with small cysts. The material escaping from these cysts caused septic peritonitis. The first patient was wonderfully changed by the operation. She was free from pain for the first time in twenty years, and could scarcely be kept quiet, so great was her joy at her release.

DR. HOWARD A. KELLY reported a

UNIQUE CASE OF EXTRA-UTERINE PREGNANCY; COMPLETE REMOVAL OF THE SAC AND CONTENTS.

Mrs. J. B., 22 years of age, married three years, of medium size, well built, but rather pale and worn looking; has been twice pregnant, the first being a premature still-birth, the second a cross-birth, necessitating turning by the feet. Since the last pregnancy she menstruated seven times. In July she menstruated the last time for four months, when a flow came on (in November), at which time she passed a piece of flesh called by a doctor a "false conception." Previously to this she had noticed a swelling in the right ovarian region which gave her some pain. This pain was constant until the flow came on, when it was relieved. In December, three weeks after this flow, she thought she felt life and believed she was pregnant. She then had colastrum and a dull pain in the breast, and the nipples were coated with a waxy secretion. Examination: A tense, smooth, elongate, ovoid sac lay in front of the uterus (which reclined in the hollow of the sacrum), and rising out of the pelvis pointing over the pubis, reached half way up to the umbilicus as she reclined on her back. The tumor was very tender on pressure and presented a remarkable smoothness and uniformity of its surface. It had a tense fluctuant feeling, and was distinctly movable as distinct from but closely connected with the right side of the uterus. She menstruated regularly in January, February and March, the flow being lighter in color and much more profuse, lasting two or three days longer than her normal menstruation. On March 13 she was menstruating freely, and the notes state "the uterus lies, small in size, in the sacral hollow, and in raising the finger from the cervix to the anterior vaginal wall, an elongate, ovoid, tense cyst is felt on the right side; it is about 3½ inches long by 2½ wide. The cyst lies in the plane of the superior strait. The anterior extremity of the ovoid lies at the pubis, and its posterior, attached extremity at the right *cornu uteri*. A well defined sulcus exists between the tumor and uterus, and the two are connected by a short but distinct pedicle. The tumor is very smooth, and of a remarkable rubber ball elasticity. It is movable over an excensus of one or two inches, but too tender to manipulate further." These notes were made a week before the operation, which was upon March 20. I then wrote to Dr. R. P. Harris that I expected to operate upon an extra-uterine cyst, and upon March 20, assisted by Dr. Joseph Hoffman, and in the presence of Drs. R. P. Harris, Chas. H. Thomas, Marie Werner, Wm. Stuart, Baldy, Chas. M. Wilson, James Gibbs, R. Keely, Paris G. Clark, McConnell, and others, the sac and its contents were removed. The belly walls were fat. The incision was about three and a half inches in length, through the linea alba, beginning about one inch above the pubis. The sac wobbled about so in the pelvis that it was hard to bring its globular form up under the line of incision. It felt at first like an enlarged uterus, but the uterus lay retroposed, anteflexed, reclining in the sacral hollow. The tumor was raised and brought out of the pelvis by passing two fingers in front of and under it, hooking it up and revolving it on the axis of its attachment at the broad ligament; it was then delivered at the linear incision by pressing the walls outward and towards the patient's back until it slipped out; it was then transfixed below its

base and tied, and with the ovary and whole of the right fallopian tube, was removed intact. The cyst was reddish blue in color, and developed in the free margin of the right fallopian tube, its longest diameter crossing the axis of the tube at right angles. Pure water was used for the sponges, and the instruments were kept in a dry pan. No antiseptic of any sort was employed. Everything was thoroughly clean and prepared beforehand, and no antiseptic was needed. The whole operation from beginning to complete closure lasted forty minutes. Silkworm gut sutures, about four to the inch, were used to close the wound, and with a little iodoform powder and dry absorbent cotton the dressing was complete. The sac was about three inches long by two and a half wide, smooth and slightly rugous in its long diameter. Dr. Charles Hermon Thomas incised it at its free extremity, cutting through the placenta into the amniotic sac, which did not contain a drop of fluid. The hands and then the head of the brownish, exsanguine fœtus protruded, its cranial bones well developed. There was not the slightest fetidity. The whole fœtus was well formed and perfectly preserved. It was a male, measuring 5¾ inches in length; the cord was five inches long, twisted from left to right. The recovery was as rapid and perfect as after any simple abdominal operation. An objection which naturally presents itself, and one which has been urged, is this: Here was an extra-uterine cyst containing a mummifying fœtus in just the condition we try to obtain by faradic fœticide. Why interfere with it at all? My reasons were several. First, my patient was constantly suffering from a painful tumor. Second, she had deteriorated greatly in health, and in place of her usual fresh and rosy complexion, was looking sallow and wan, and was very despondent. Third, the facility of the operation was manifest, and my bimanual examination revealed all the peculiarities of the case before making the section. Fourth, the very real danger of peritonitis and the possibility of the later discharge of the fœtal parts by protracted suppuration. And further, I was acting in accordance with the practice of such eminent authorities as Lawson Tait and Olshausen, who counsel early interference in all pelvic tumors where the probabilities of success are good. It must be remembered in any critique of the case, that it presents features utterly unlike any other abdominal pregnancy ever recorded as operated upon. Dr. Harris's remarks will show that the crisis is not always passed when the fœtus is killed by electricity.

Dr. R. P. Harris said the case reported by Dr. Kelly had as clear a history of extra-uterine pregnancy as we ever find in the *very early period* of ectopic gestation, *when*, it cannot be claimed, that a positive diagnosis can be made. We can, however, very closely approximate it, as was done prior to this operation. The woman had been twice normally pregnant; she ceased to menstruate on July 16, 1885, and there was no recurrence until November 17, a period of four months. She considered herself pregnant, and as the menstrual flow of November lasted a week, was excessive, and she passed, as she termed it, "two pieces of flesh," she thought she had aborted. Having seen her in the operation, and upon several occasions since, I learned from her that her menstrual periods usually lasted about three or three and a half days, but had increased to a week or thereabouts, after the return in November.

The development of the breasts; the presence of astrum in them; the discharge of the decidua; the detection of the spherical tumor connected to the right *cornu uteri;* the decrease of this in size after the decidual expulsion; and the prolongation of the menstrual periods, all pointed to the existence of a right fallopian pregnancy and a dead fœtus. When the tumor was brought into view in the operation, it was seen to be of a reddish blue color, which is common to fœtal cysts, and about three inches in diameter. When opened after removal, the placenta was found at the top, and the cyst empty of amniotic fluid, which had been removed by absorption. The fœtus was a male, 5¾ inches in length; and to judge by its size, degree of cranial ossification, and mark of sex, it must have died near the end of the fourth month. Such a fœtus, at the time of its death, must have occupied a cyst as large as a cocoanut. The loss of fluid in the cyst made it sufficiently flaccid to admit of its being drawn upon so as to form a pedicle for transfixion and ligation. Fortunately for the woman, the cyst retained its integrity, the fœtus perished, and there was no peritonitis to produce adhesions; the operation was therefore as simple as an easy ovariotomy, and no more dangerous.

There can be no question in my mind that under all the peculiar circumstances of this case it was proper to remove the fœtal cyst for the purposes of relieving the pain felt in it, and of checking the menstrual loss. The question might be asked, Why operate in such a case more than in one where fœtal death has been produced by the farradic current? I answer, that under the same peculiar sufferings and advantages the exsection might be called for. The after history of the cases of faradic fœticide has yet to be written. Thus far, there has been no death, immediate or remote, but there have been attacks of peritonitis, and there may be other troubles from the dead fœtus after a long period. Very little has been recorded of the ill effects produced by ectopic fœtuses, which have died in the second, third and fourth months of tubal or abdominal gestation. We know that a fœtus of the fourth month has been passed whole from the rectum, and that one still smaller has been vomited; but death has rarely taken place within an unruptured cyst, in the second, third or fourth months, and we therefore do not know by the past what may be likely to happen in some of the cases subjected to faradization. Thus far the method has much to recommend it, by its safety of application, and by the present health of its subjects. Fœtal death being followed by absorption of the amniotic fluid, there is no longer any danger of the cyst rupturing from tension, and the woman's life is saved.

The first to destroy a fœtus by electro-magnetism in the United States, was our fellow-member, Dr. Joshua G. Allen, who has now operated three times with success, and all of the women are still living. Case 1, 1869, and Case 2, 1870, were illegitimately

impregnated, and both have since married. Case 1 has remained childless; she continued well for two or three years, and then went to the Jefferson College Hospital, where she was supposed to have rheumatism, but as the pain was in the lower part of the abdomen on the side corresponding with the seat of the fœtal cyst, Dr. Allen attributes the attack of pain to the presence of the foreign body; the age of the fœtus was computed at three months. In Case 2 the age was believed to be eight weeks, and the woman did well for a year or two, when she had an attack of peritonitis lasting about three weeks. She subsequently married, bore a female child, now ten or eleven years old; had a second attack of peritonitis about a year later, and four or five years later, a third. Although severe, Dr. Allen did not regard the attack as dangerous to life.

Dr. J. C. Reeve's patient has had a probation of six years, and has had no after trouble to note.

Dr. C. L. Billington writes me that his patient has improved in health, and that although the fœtus was computed to have a three months' growth, "there was no tumor perceptible five or six months afterwards."

Dr. Lusk's second operation was followed by a peritonitis which confined the patient to bed for two months. She is now near her maturity of pregnancy and has had no trouble during gestation from the presence of the tubal sac.

Dr. Bache McE. Emmet's case never showed the the slightest effect from the presence of the ectopic fœtus up to the last report, about a year ago.

Dr. Garrigues examined his patient two years after the operation, which was performed upon a fœtus of "barely two months," and "the tumor to the right of the uterus had entirely disappeared." She had no longer any orgasm in sexual intercourse.

Dr. P. F. Mundé reports that at the end of two years his patient remains perfectly well.

In her menstruation, which was in progress when I last saw the patient of Dr. Kelly, the loss was restored to its normal moderation, and she was free from pain.

Dr. Baer spoke of a case of extra-uterine fœtation which had gone to full term, and in which laparotomy was performed thirteen months after the death of the fœtus. The mother had shown great loss of vitality, and the tumor felt loose in the abdominal cavity and promised to be easy of removal, but when the abdomen was opened, adhesions were found so numerous and strong that removal would not be safe. The opening in the sac was stitched to the abdominal wound. The temperature did not rise and there was full recovery. This was an instance of tubal pregnancy carried to full term.

Dr. Parish said we would find, in the large majority of these cases, that at an early period adhesions would be slight and removal easy. Operation after rupture of the cyst is not complicated by adhesions except those formed by the placenta, which are so vascular as to defy separation, and constitute the great danger. Prior to the fourth month before such adhesions are formed, it is safe and easy to operate. It is a favorable time to operate after the death of the fœtus, because the maternal tissues lose the extreme vulnerability that exists during the life of the child.

Dr. Longaker had been surprised at the absence of peritonitis after so much pain and tenderness.

Dr. Kelly remarked that the pain had always been non-febrile; there had been no elevation of the temperature or pulse.

There had, in this case, been no sense of contraction in handling the tumor, as had been noticed in hydro-salpinx.

L. Tait had heard the uterine souffle in one case at his first examination, but could not find it again. Dr. Kelly has a case of extra-uterine fœtation on hand now, and is waiting for the death of the fœtus, when he will operate. Ohlshausen has formulated the rule that "any abdominal tumor as large as the fist should be removed."

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Royal College of Surgeons of Dublin; Honors to Pasteur, Huxley, Paget, Lister, Wells and Marshall —Vivisection Experiments in 1885—King Theebaw's Hairy Family—Anthropological Society of Bombay—Bulbar Paralysis.

The Lord Lieutenant and Lady Aberdeen, together with the Prince and Princess Edward of Saxe-Weimar, were present on the afternoon of April 28, at some interesting ceremonies in the Royal College of Surgeons, Dublin. First, Honorary Fellowships of the College were conferred on MM. Pasteur and Huxley, Sir James Paget, Sir Joseph Lister, Sir T. Spencer Wells, and Mr. John Marshall. From various causes Sir James Paget was the only one of the recipients who was able to be personally present. Next was unveiled a statue erected to the memory of William Dease, one of the founders of the College and its first President. He died in 1798. This statue which is erected in the entrance hall, is the gift of his grandson, Mr. O'Reilly Dease, who has also presented the Butcher Museum for the accommodation of surgical casts. This Museum was formally opened. The honors of the reception was performed by Sir Chas. A. Cameron, the President, and Mr. William Stokes, the Vice-President, the former of whom made an interesting speech eulogising William Dease and Sir James Paget.

The report from inspectors on experiments performed on living animals during 1885 has just been published. The total number of experiments performed during the year was about 800. Of these 210 were done under the restrictions of the license alone, and eighty-two lecture demonstrations under similar restrictions. As regards the amount of pain involved in these experiments, in all of them, except those performed under special certificates, the animals are rendered insensible during the whole of the experiment, and are not allowed to recover consciousness. With respect to the experiments under special certifi-

cates, which dispense either partially or entirely with the use of anæsthetics, no less than 328 consisted, so far as any operative proceeding was concerned, in simple inoculation or hypodermic injection, either with some morbific virus or for the purpose of therapeutic inquiry, and in which the administration of an anæsthetic to which all animals have a great repugnance, would only entail needless annoyance and distress. In this class of experiments, when the inoculation took effect at all, any appreciable suffering could be likely to ensue only in those cases in which some morbid affection was induced as in ordinary vaccination. It is impossible to give any precise estimate either of the number of cases thus affected, or still less to appreciate the trifling and brief distress rather than actual pain that would be caused. Considered in this way from the returns that have been received from the various operators, and from other considerations drawn from their reports, it appears that the number of animals that suffered any appreciable pain might be estimated at thirty-five or forty and these for the most part frogs. Although the number of experiments in 1885 was nearly double those performed in 1884 the increased number consisted of experiments not, or scarcely involving any appreciable increase of suffering of the animals employed.

Ex-King Theebaw's famous hairy family, which he long kept jealously at Mandalay, are coming to Europe for exhibition. The family have been renowned in Burmese history for many years, and the present members, a mother and son, form the fourth generation known. The mother is 63, quite blind, and usually sits motionless on a platform, occasionally fanning herself and speaking in a low, sweet voice. She was seen and described by Colonel Yule when on a mission to the court of Ava in 1855. Save her hands and feet, she is covered with long soft hair, like her son, who is covered even to the drums of his ears, the hair in some places being five inches long. The man is of medium height, with pale brown skin, and is fairly friendly, having been partly educated and married to a maid of honor. Neither he nor his mother have either canine teeth or grinders.

An Anthropological Society has been founded in Bombay in order to gather and classify information respecting the native races of India. The scheme is eagerly taken up and a large number of members have already joined, under the presidency of Mr. Tyrell Leith. As a native member points out, the Bombay Presidency affords excellent ground for commencing such work considering the mass of aboriginal tribes in the hills and jungles, descendants of the non-Aryans driven out by the Aryan invasion. They are generally known as the "black races," and preserve native traditions fully 3,000 years old.

An interesting case of bulbar paralysis has recently been under the care of Dr. Broadbent, and was mentioned by him at the last meeting of the Harveian Society. The case occurred in a man aged 35, who was admitted as an in-patient into St. Mary's Hospital on January 29, 1886. While a soldier serving in India he had suffered from ague, syphilis, sunstroke, dysentery, etc. The first thing he noticed was that about a year before admission he began to lose his voice, and the food collecting in the sides of his mouth, gave him difficulty in swallowing it, necessitating manipulation with the fingers, the saliva dribbling away. These conditions, along with a gradually increasing muscular weakness, had continued, with now and then a slight remission, until admission, when he was unable to speak except in a whisper, every syllable necessitating a long forcible expiration. The tongue was small and shrunken, could not be properly protruded, but could be moved from side to side. There was impaired movement of all the facial muscles of expression, traces of the reaction of degeneration, general muscular wasting, increased superficial reflexes and good sensation. There had been a general improvement since admission in all these symptoms, the chief trouble arising from the profuse amount of saliva with which the pharynx and larynx were frequently blocked. The condition of the patient at the meeting included all the foregoing symptoms, with the addition of pain in the left side of the face and head, with occasional nausea. The ophthalmoscope showed pallor of the centre of the discs and very small vessels, vision was consequently impaired. The pupils were somewhat contracted, but retracted to light and accommodation. Hearing was also impaired. The heart's action was weak, but regular; respiration was chiefly abdominal. The man walked with a stiff but steady gait; had great difficulty in going up stairs or in rising from his seat, owing to weakness of the extensor muscles of the thigh, which, in common with most of his extensor muscles, were wasted, exhibiting to a slight extent the reaction of degeneration. The superficial reflexes were exaggerated, and there was ankle and thigh clonus in the left leg. Sensation was complete. Treatment had consisted of rest in bed, with 30 grains of iodide of potassium daily. G. O. M.

BOOK REVIEWS.

A System of Obstetric Medicine and Surgery, Theoretical and Clinical. For the Student and Practitioner. By Robert Barnes, M.D., Obstetric Physician to St. George's Hospital; Consulting Physician to the Chelsea Hospital for Women, etc., and Fancourt Barnes, M.D., Physician to the Royal Maternity Charity and to the British Lying-in Hospital; Assistant Obstetric Physician to the Great Northern Hospital; Physician to the Chelsea Hospital for Women. 8vo., pp. 884. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co. 1885.

In the preface to this work the statement is made that "the history of gestation, of puerpery, of the mechanism of labor and of hæmorrhage, is contributed by Robert Barnes, while much of that which relates to the prophylaxis of puerperal diseases, and the description of operations, is contributed by Fancourt Barnes. Still the production is essentially a joint production." That part of the book which treats of embryology is contributed by Prof. Milnes Marshall. The authors justify their action in calling

upon Prof. Marshall by saying that "no man can hope to master the facts and science of embryology unless he can spend several hours daily in the physiological laboratory."

The authors claim that the immediate purpose of the work is to furnish a handbook of obstetric medicine and surgery for the use of the student and practitioner, and they have succeeded well in their purpose. It is not an exaggeration to say of the book that it is the best treatise in the English language on obstetrics yet published, and this will not be a surprise to those who have been familiar with the work of the elder Barnes.

The limits of this review make it impossible to analyze in detail even the chapters of the work, and hence mere mention of one or two special subjects must suffice. Unfavorable criticism may seem presumptuous, but the authors have hardly given as much attention to the application of Braxton Hicks's method of bimanual version in *placenta prævia*, as the matter deserves, especially in view of the very favorable results which have recently followed that practice in Germany. (For particulars see *American Journal of Obstetrics* for December, 1884—a report by Dr. Richard Lomer, assistant at Schröder's clinic in Berlin.)

In relegating the so-called and formerly disputed "*milk fever*" to the past the book simply adds the weight of its authority to the best teaching of the time. The classification of puerperal fever may meet with some opposition, but is clearly and sensibly put, and will probably meet more approbation than opposition.

What the author says in regard to the significance of kyesteine in the urine (p. 175) is an amusing illustration of the strength of a prejudiced opinion. After stating that Parkes, Kane and Braxton Hicks have carefully investigated the subject and have decided that kyesteine has been found in the urine of virgins, and appearances very similar to it in that of men, Barnes remarks: "We may in conclusion state that, assenting to the propositions of these authorities, we have seen several instances in which a confident diagnosis of pregnancy expressed on the evidence of this appearance proved to be correct."

Perhaps the only serious fault of the book is the lack of fulness and completeness in the index. So good a book deserves a better index than this one has. In conclusion it is not an exaggeration to say that every practitioner who desires to have the best obstetrical opinions of the time in a readily accessible and condensed form, ought to own a copy of the book.

A TREATISE ON NERVOUS DISEASES; THEIR SYMPTOMS AND TREATMENT. A Text-Book for Students and Practitioners. By SAMUEL G. WEBBER, M.D. Clinical Instructor in Nervous Diseases, Harvard Medical School; member of the American Neurological Association, etc., etc. 8vo. pp. ix—415. With Illustrations. New York: D. Appleton & Co. 1885. Chicago: Jansen, McClurg & Co.

The author disarms hostile criticism by the statement in his preface that the book is not written for specialists. The general introductory chapter on methods of examination in nervous diseases, together with a consideration of certain general conditions common to many forms of nervous lesion is well written. The general classification made by the author is: 1. Diseases of the Brain; 2. Diseases of the Spinal Cord; 3. Diseases of the Peripheral and Sympathetic Nerves; Unclassified.

The anatomy of the brain is illustrated by fifteen figures taken from Ecker, Wernicke, Erb and Ferrier, some of the drawings being modified in reproduction. The arrangements of the relation of the text to the drawings is unfortunately such that the combined impression obtained from them is much less clear than it both ought and might be. The anatomy of the cord is illustrated by Hammond's colored plate, modified from Flechsig, and leaves nothing to be desired. The arrangement of colors is such that the relations of the direct and crossed pyramidal tracts may be seen at a glance, and the text is clear and direct.

Among the "unclassified" diseases the author has given a satisfactory account of the comparatively rare and interesting disease *tetany*.

The general arrangement of the book is excellent, but the clinical pictures of the various diseases are not so closely cut and systematic as it seems might be easily possible.

A list of the authors consulted, together with the titles of the articles by each, is given at the head of each chapter.

In his discussions of treatment, the author shows that he is not a friend of nihilism in therapeutics, and also that he is familiar with the subject of which he writes.

For the purpose designed, for students and practitioners, the book is a valuable addition to the literature of the subject, and will prove a reliable clinical guide in the hands of any one who reads it carefully.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 29, 1886, TO JUNE 4, 1886.

Capt. E. F. Gardner, Asst. Surgeon, ordered for duty at Madeira Barracks, N. Y. (S. O. 47, Div. Atlantic, June 1, 1886.)

First Lieut. R. L. Robertson, Asst. Surgeon, relieved from temporary duty at Ft. Snelling, Minn., and ordered to Ft. Keogh, M. T.

First Lieut. Jno. L. Phillips, Asst. Surgeon, relieved from duty at Ft. Keogh, M. T., and ordered to Ft. Sisseton, D. T. (S. O. 45, Dept. Dak., May 24, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 5, 1886.

Smith, Howard, Surgeon, detached from the "Nipsic" and placed on waiting orders.

CORRIGENDA.

In THE JOURNAL of May 29th, page 605, the residence of Dr. W. B. Welch should have been given as Fayetteville, Arkansas, and that of Dr. W. C. Wile as Newtown, Conn., instead of New London.